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ABSTRACT

School buildings must not only be designed for today's educational programs, but must be structurally sound and adaptable to accommodate programs developed in the future. This publication is intended to provide school facility planners with a source of information that will be of assistance to them in the planning process and to indicate methods for processing school construction projects. (Author/MLF)

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PLANNING

EDUCATIONAL

ENVIRONMENTS

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State of Vermont

DEPARTMENT OF EDUCATION

Montpelier, Vermont

Acknowledgement

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THE VERMONT STATE BOARD OF EDUCATION ENCOURAGES CREATIVITY IN LOCAL SCHOOL DISTRICT PROGRAMS AND ENCOURAGES ALTERNATIVE METHODS OF REACHING GOALS ADOPTED BY LOCAL SCHOOL DISTRICTS. THE STATE BOARD OF EDUCATION WILL CONSIDER WAIVING ITS ESTABLISHED REGULATIONS WHEN NECESSARY FOR THE DISTRICT TO CARRY OUT THE OBJECTIVES OF THE LOCAL EDUCATIONAL DESIGN APPROVED BY THE STATE BOARD OF EDUCATION. REGULATIONS WHICH HAVE BEEN ADOPTED BY THE STATE BOARD OF EDUCATION SHALL APPLY TO ALL SCHOOL DISTRICTS WHICH HAVE NOT DEVELOPED LOCAL PROGRAMS AND ALTERNATIVES APPROVED BY THE STATE BOARD OF EDUCATION.

State Board of Education

Adopted October 18, 1971
Revised May 22, 1972

INTRODUCTION

Every community needs an educational facility that will make it possible for the community to provide the best educational program that today's wisdom can devise. In planning today for the future the way must remain open for developing improved programs. This guide has been prepared in the spirit of looking ahead and it is this spirit which the Department of Education recommends to all school facility planning committees.

School administrators and board members should make their decisions on building policies with the help of the school staff, citizens of the community, students, and such expert consultative staff as is available. All play an important role in deciding whether new buildings must be built, old buildings rehabilitated; or, consolidation of small districts should occur and one single facility constructed to serve two, three or more districts. Year-round scheduling, use of buildings within the community, and any other alternative that may be feasible and acceptable to the community should be explored.

The public must be assured that its taxes are being expended for the greatest good of all Vermonters and more specifically that funds provided for education are disbursed on the basis of established standards which encourage excellence in education. Toward this effort the Department of Education's major role is to offer technical advice and consultation on educational programs, school construction, union district formation and planning educational futures in those communities which desire such service.

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Foreword

The intent of this publication is to provide school facility planners with a source of information that will be of assistance to them in the planning process and to indicate methods for processing school construction projects.

The problem of providing necessary school buildings is facing educators everywhere. Due to the changing nature of the educative process, administrators, school boards and planning committees should examine a variety of learning programs of each child. This environment should eliminate the traditional separation of the school and community by providing for the cooperative use of the facility.

School buildings must be designed not only for today's educational programs, but must be structurally sound and adaptable to accommodate programs developed twenty to thirty years or more in the future. It is hoped this document may help you achieve this goal.

Feel free to contact the department personnel for assistance when it is needed.

This publication is coded for your convenience in locating regulations which are requirements of the various agencies of State Government. All such requirements will be in capital letters and following is a code designating which agency enforces the regulation:

(E) Department of Education

(H) Department of Highways

(P) Policy of the State Board of Education

(S) Statute

(PS) Department of Public Safety

(EC) Agency of Environmental Conservation

(LI) Department of Labor and Industry

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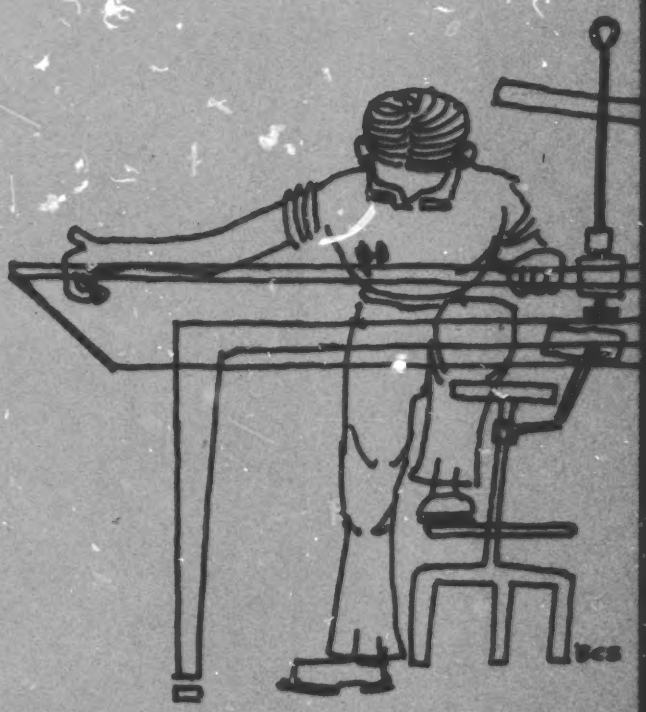
Chapter I
Planning



CHAPTER I

PLANNING

Educational Specifications

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"Most school systems include the development of some form of educational specifications as a major step in the process of planning an educational facility. Also, architects recognize that educational specifications should be provided to serve as a guide in developing the architectural plans. "Ed specs" have thus become a part of the routine - a routine that is taken for granted far too often.

Somehow, however, this routinizing and perceived understanding have resulted in too many educational specifications that lack the vitality, excitement and thoroughness that should characterize them. We need to ask some very basic questions and rethink answers to these key questions:

What are educational specifications? Definitions from various textbooks, pamphlets, and articles vary. The Council of Educational Facility Planners states:

> Educational specifications or program requirements are the means by which the educator describes the educational activities and spaces which need to be incorporated in a proposed new or renovated facility. They are written statements that serve as a vehicle of communication between the educator and the architect.

Two points need to be emphasized. One is the educational, or program, emphasis. Educational specifications should concern themselves with the persons and activities to be housed and the program requirements - not the architectural solutions.

Secondly, it is essential they be written, pulled together into one document, and distributed to all involved in their development. It is a serious mistake to rely on discussions, memos, notes, reports of subcommittees and minutes of meetings. All program decisions should be written out and included in the educational specifications document.

It is probable that some changes will be necessary after the educational specifications have been printed and distributed. Any such changes should also be written and distributed to all participants as addenda.

Although the preparation of a formal written document may seem time-consuming and unnecessary, it is a wise investment of time, effort and money and an essential step that helps to promote understanding and acceptance and to avoid delays.

Why are educational specifications important? Educational facilities are but a means to an end. They exist only to house persons and the activities those persons wish to carry out. The good educational facility is one that enhances the learning process. It is an effective tool for the learner and the professional staff and aids in the accomplishment of stated educational objectives.

Unless educational specifications effectively spell out objectives and translate those objectives into activities (program) and the types of spaces required to house those activities, the school system has little chance of constructing a facility that enhances the educational program. In fact, the new facility is more likely to remain neutral, or may even prevent the attainment of certain educational objectives.

Return on dollars spent is another reason. Education is taking a large bite from the local taxpayer, and school buildings are a highly visible and vulnerable target for the irate citizen. School districts are finding it increasingly difficult to pass bond issues.

The taxpayer has every right to demand that a new building be effective and efficient to provide the greatest possible return for dollars spent. He should be assured that careful and thoughtful planning has taken place and be helped to understand that a "building that works" (i.e., aids in accomplishing objectives) will be the most economical building throughout its long lifetime.

Educational planning for a new building provides the opportunity to take a fresh look, in depth, at what is being done in the schools and what should be done in the future. It is an exciting, challenging, and demanding opportunity that should not be missed.

Wise school districts take advantage of this opportunity and encourage the community and the professional staff to carry out a careful analysis and evaluation of existing programs as an important phase of planning for new facilities. They encourage the asking of

hard questions like:

What are our present objectives?

How well are we achieving them?

What should be our goals and objectives?

What should we be really trying to accomplish with, and for, the young people and adults of our community?

What activities will need to be carried out if we are to accomplish these objectives?

What should be included in educational specifications? There is no single table of contents for educational specifications. Each school system needs to develop specifications in a way that best meets its needs.

First, it is necessary to consider how educational specifications should be developed. Since the major emphasis must be on activities to be carried out, by working backwards we find these activities should be planned to accomplish certain stated goals that are in turn based on the needs of the pupils to be served. The needs of young people and adults are determined, to a great extent, by the community in which they live.

Thus, we start with very broad considerations and work toward the more specific in this order: the community, needs of pupils, goals and objectives, activities, requirements for physical space.

We may even discover that some of the experiences can best be provided someplace other than in the traditional school building, e.g., the Philadelphia Parkway Plan or Hartford's Everywhere School, and other programs that involve "the community as the school." The

outline on the following page suggests how a set of thoughtful educational specifications might be organized.

Who should develop educational specifications? It seems logical that those persons best able to describe the learning activities that are to take place within a new facility should have a major involvement in the development of the educational specifications. This means, of course, extensive participation by the professional staff.

Donald J. Leu (Planning Educational Facilities, New York: The Center for Applied Research in Education, 1965, p. 33) suggests the planning team include (1) the board of education, (2) the superintendent of schools and his administrative staff, (3) a building principal, (4) selected teachers, (5) members of the student government, (6) custodians, (7) representative citizens, (8) curriculum specialists, (9) educational consultants specializing in the planning of educational facilities, and (10) the architect selected to design the building.

There is no complete agreement as to the extent of involvement of citizens and pupils. The opinion of both groups, however, are often valuable. In cases where the new facility is to be a "community school," it would certainly be necessary to involve groups and agencies that would be sharing the facility with the educators.

Perhaps more important is the need to establish an effective organizational pattern and define the roles of all participants clearly to avoid late misunderstandings.

What to include in education specifications

Following is a suggested outline for a thorough organization of education specifications. The outline is not intended to include every item for a new school, but can certainly be used as a starting point for any set of educational specifications.

1. Introduction

1.1 The importance and value of thorough and thoughtful planning

1.2 How this educational facility fits into the long range plan for educational facilities for the community

1.3 Procedures followed in developing the educational specifications

1.4 Procedures to be followed (including endorsement or approval steps) to convert written educational specifications into schematics, preliminary drawings, working drawings, and a completed facility

1.5 Timetable

2. The community to be served

2.1 Physical characteristics

2.2 Human characteristics

3. The pupils to be served

3.1 Grades or ages of pupils to be housed (and how this fits into the over-all pattern for the school district)

3.2 Number of pupils to be housed

3.3 Types of pupils and a discussion of their needs

3.4 Provision for future expansion

4. The educational program to be housed

4.1 Philosophy of education (a statement as to what the community believes about the education of its young people)

4.2 Goals of the elementary (intermediate, or high school) program

4.3 Basic methodological and organizational concepts for which provisions should be made

- 4.31 Pupils
- 4.32 Staff
- 4.33 Time
- 4.34 Materials
- 4.35 Space

5. General environmental considerations for the facility

5.1 Visual

5.2 Thermal

5.3 Sonic

5.4 Aesthetic

5.5 Spatial relationships

6. Instructional areas

The following items should be considered for each category of space. The categories may be by academic discipline, by age group, etc.

6.1 Objectives (or desired outcomes)

6.2 Consideration of the basic concepts listed under 4.3 (above)

6.3 Activities to be housed

6.4 Persons to be housed

6.5 Furniture and equipment to be housed

6.6 Special requirements or considerations, *e.g.* environmental

6.7 Space requirements (estimates with help)

6.8 Cooperative or joint efforts with other instructional areas

6.9 Spatial relationships

7. Supportive areas (items 6.1-6.9 should be applied to each of the supportive areas as applicable)

7.1 Staff

- 7.11 Planning – working – conference
- 7.12 Dining
- 7.13 Relaxation

7.2 Administration

- 7.21 Public reception
- 7.22 Conferences
- 7.23 Office
- 7.24 Secretarial
- 7.25 Records
- 7.26 Data processing
- 7.27 Communications
- 7.28 Time system
- 7.29 Alarm system

7.3 Student services

- 7.31 Guidance and counseling
- 7.32 Health clinic
- 7.33 Student activities
- 7.34 Student store
- 7.35 "Home base"
- 7.36 Lockers
- 7.37 Informal gathering area

7.4 General or service areas

7.41 Food service

Cafeteria (hot, cold)

Kitchens (central and satellite)

7.42 Circulation – lobbies, corridors, stairwells

7.43 Maintenance and operational

Floor and wall finishes within various areas:

Receiving

Storage

Custodial

Heating – cooling

7.44 Toilet facilities

8. Community programs to be housed

8.1 Types of programs (items 6.1-6.9 should be applied to each of the programs as applicable)

- 8.11 Educational (adult)
- 8.12 Recreational
- 8.13 Cultural
- 8.14 Social

8.2 Community agencies or services to be housed

8.3 Special facilities to be provided

8.4 Shared facilities with "regular" school program

8.5 Evening, weekend, and summer use

8.6 "Zoning" of building

9. Site considerations

9.1 Size, location, physical characteristics

9.2 Ingress and egress

9.3 Circulation on the site

9.4 Bus loading and unloading

9.5 Parking, drives, and walkways

9.6 Insulation from surrounding areas

9.7 Outdoor education programs (see instructional areas – science)

9.8 P.E. programs (see instructional areas – physical education)

9.9 Community recreation programs

THE DEPARTMENT OF EDUCATION REQUIRES THAT THE EDUCATIONAL SPECIFICATIONS BE SUBMITTED TO THE DEPARTMENT FOR REVIEW PRIOR TO A BOND ISSUE. (E)

It should be noted that the educational program should be developed well in advance of hiring an architect.

The Role of the Architect

Regardless of the scope of a project for building or renovation, AN ARCHITECT REGISTERED BY THE STATE OF VERMONT IS REQUIRED TO SUPERVISE THE DESIGN AND CONSTRUCTION OF THE PROJECT. (E) (On small projects, this requirement may be waived upon approval of the State Board of Education.) §3448 OF TITLE 16 REQUIRES THE SCHOOL DISTRICT TO EMPLOY AN INDIVIDUAL COMPETENT IN THE BUILDING TRADES TO SUPERVISE THE PROJECT AS SOON AS CONSTRUCTION BEGINS. (Clerk of the works) (S)

If reasonable assurance of public approval is indicated, the architect may be hired to proceed with preliminary planning and rough design; if support has not yet jelled, a competent architect may be of great assistance in explaining the project and its costs to the voters. Another vital role of the architect in the preliminary stages is in the selection of the site. He can save thousands of dollars with his advice on optimal site location and on orienting and locating the building.

The architect's first step in actual design is to study the educational specifications, for it embodies the scope and philosophy of the program. For this reason the architect must be familiar with educational programs as well as modern architectural design and developments in school construction. He must, of course, be aware

of relative costs and be able to prepare clear, complete specifications and to provide or secure engineering and other consultant services. Flexibility of mind, an ability to work with others, accuracy, and promptness are qualities which the architect should possess. In large projects the size of the architect's staff may have some bearing on how rapidly a project may be designed. The amount and type of supervision which the architect can and will give to the project should be a consideration, and he should have demonstrated in the past an ability to build economically while utilizing new ideas.

The Department of Education can provide a list of competent architects, who have built schools in the New England region, but this list should not be considered exhaustive. While it is not required that the architect have built a school in the past, he must understand and be capable of dealing with the special problems associated with school construction. It is useful to examine some of the buildings designed by those architects whom the committee is interested in interviewing and who have the desirable qualifications. When examining these schools, the teachers, superintendents, contractors, and others involved in the construction and use of the building should be interviewed. Once the candidates for the job are narrowed down to two or three, interviews should be conducted: care should be exercised in basing one's whole decision on the interview, in that it is possible, an architect who sells himself better than another may be less qualified for the job.

When the decision to hire a particular architect is made, a contract between the architect and the school district should be drawn up. Usually this contract is an American Institute of Architects standard form. If the district has not yet voted to finance the project, the contract should state what the remuneration is to be if the district rejects the proposed project. All contracts should answer the following questions:

1. What is the basic rate for the architect's services?
2. How are the architect's services defined?
3. Are the services of necessary engineers included in the architect's fee?
4. Is extra pay provided for unusual extra work required of the architect?
5. How and when are payments due the architect?
6. What surveys and tests are to be provided and who pays for them?
7. A clerk of the works must be employed as required by statute; who selects him; who pays him; and, what are his lines of responsibility?
8. How many sets of plans and specifications will the architect provide without charge?

The important thing to remember is that the architect is employed by the school district and consequently is working for them. His design and ideas should be developed from the educational specifications presented to him. THE DEPARTMENT OF EDUCATION REQUIRES THE ARCHITECT TO SUBMIT A MICROFILM COPY OF THE TOTAL PROJECT TO ADMINISTRATIVE SERVICES FOR FILE PUPPOSES. (E)

Factors Affecting School Construction Costs

There are four major variables which establish the cost of any school. These are:

1. Curriculum
2. Enrollment
3. Site
4. Quality

Of these four, the first two affect cost to the greatest extent.

Curriculum influences cost because it establishes the area requirements for instruction. There are, of course, the basic academic offerings which must be provided for in any modern school. The decisions, however, which must be made by the school directors and the community which will strongly influence cost are not those relating to the basic courses, they are decisions relating to shops, music, auditorium, physical education, remedial reading, library, guidance, art, speech, homemaking, language laboratories, etc. Any one of these offerings adds area to the building and cost responds directly.

The second greatest influence on school cost is enrollment. It is apparent that for any fixed program the greater the number of students enrolled, the lower the cost per student will be. A basketball court is 50' by 84' whether 300 students use it or 600 use it. The cost of the court per student, however, is far less with the greater number. Statistics indicate consistently that a small school must provide all of the basic spaces (administration, kitchen,

cafeteria, classrooms, storage, toilets, gymnasium, science facilities, etc.) that a large school must provide and that the larger enrollment does not result in a proportional increase in cost. The reason for this is that the basic facilities required are not dependent on the number of students and enrollment variations do not substantially affect these area requirements. Minor area increases and more general classrooms are the added spaces resulting from larger enrollment. It may, therefore, be said that a 600 pupil school will cost more than a 300 pupil school, but it will not cost twice as much and the cost per pupil for the larger school will be substantially less than for the small school.

Site can also have a direct bearing on construction cost. Large differences in grade elevation may require substantial earth moving to achieve a suitable location for playing fields and parking areas. While a building can generally be designed to conform to site shape, there is no doubt that a building on a flat site goes up faster, requires fewer stairways and has fewer mechanical problems than a building on a steeply pitched or irregular site. Site selection must also consider sub-soil conditions. Soft wet soil provides poor bearing capacity and large footing may be required. Rock may mean expensive blasting. Availability of water, electric service and access roads must also be considered as site problems affecting cost.

Quality is the most difficult of the variables to describe. This is true because it may not be easily recognized in the first year or two of building operation. Quality relates to cost in two ways.

It affects initial expense and operating costs. For example, if asphalt tile is used to cover toilet room floors, the rooms will probably be acceptable for a year or two. After that time it may become increasingly difficult to eliminate odor, and tiles in areas which are subjected to dampness may begin to get loose. The initial cost was low, but the maintenance cost of this floor over the life of the building might pay for ceramic tile floors many times over.

The same delayed expense may be applied to almost any material selection; wood sash-aluminum sash, wood door frames-steel door frames, aluminum flashing-copper flashing, incandescent lighting-fluorescent lighting, and so on. Initial expense can be cut greatly by reducing quality. It must be realized, however, that the additional maintenance and operating expenses resulting from poor quality, and which will go on for fifty or more years, may exceed the higher initial cost.

Quality has another aspect which affects cost. This is design; the ability to assemble the areas and relate the various functions to achieve the maximum in educational value and the best balance of materials without including unnecessary area or materials which do not contribute directly to the function of the building. This is a matter of architectural judgment, which can be achieved only through experience.

The old saying, "You get what you pay for" never applied to anything more closely than it does to school planning.

How much does a school cost? With the variables described above, it is apparent that there is no good answer to this question. Averages, however, are available and while use of averages is dangerous, ballpark estimates may be made up through their use. Assuming enrollment of 600 pupils, the area per pupil will probably be between 110 and 135 square feet (variation resulting from decision regarding program) for a secondary school and 85 to 100 square feet for elementary pupils.

Other factors do affect cost but not to the extent that the four major variables do. Winter construction, quantity of construction in the area, and competition in bidding are some of the lesser influences.

To really understand school construction costs, we believe an inspection of buildings built is essential. It is possible then to see materials in use and their ability to produce economy throughout the life of the building. Economies in plan and site become apparent and the effect of the program on the area may be easily realized.

Costs

Costs prepared and used by the State Department of Education are on a square foot basis and only include those items which are elegible for state construction aid which are:

Fees - Architectural, engineering, legal, consulting (as related directly to the facility)

Site Development

Actual Construction

Fixed Equipment (movable equipment - See State Board of Education policy dated 2/24/70) Appendix A

Comparative Cost Dangers

Building costs are usually analyzed by establishing the total building area in square feet and the cost per square foot. When multiplied together they produce the building cost. To obtain a total project cost the cost of equipment, fees and other expenses, the cost of site development and occasionally the cost of land is added.

Considering cost per square foot alone is often misleading. Claims of exceptionally low costs should be questioned. It is not always meaningful to compare per square foot cost figures because different individuals use different formulas in their computations. Even when costs per square foot are comparable, they may not be true indications of cost of construction.

Example: School A provides 120 square feet per pupil for 600 pupils, total gross area 72,000 square feet. School B provides 140 square feet per pupil for 600 pupils and has a total gross area of 84,000 square feet. School B boasts a per square foot cost of $16.00 - total building cost $1,344,000. School A per square foot cost is $18.00; however, its total building cost is $48,000 less than School B or $80.00 less per pupil.

School A	School B
72,000	84,000
$ 18	$ 16
$1,296,000	$1,344,000
Cost per pupil $2,160	Cost per pupil $2,240

Total building cost taken alone without equipment, land and site development also may not be reliable.

Two elementary schools - same size for 600 pupils, same building cost.

	School A	School B
Building cost	$1,296,000	$1,296,000
Equipment	100,000	136,000
Site	20,000	80,000
Development	60,000	90,000
Total	$1,476,000	$1,602,000
	or $2,460 per pupil	or $2,670 per pupil

Although both had identical costs, School B invested more in the project than School A. A difference of $210 per pupil.

Total project net is not always a true indication of the eventual cost of a building. Two schools are completed at the same project cost. School A was planned well and utilized materials which will over the years decrease operating and maintenance costs. Its kitchen was planned so that it required one less employee in the kitchen. It was also planned to utilize less power than School B for ventilation, cooling and heating. True costs are long range costs which consider both operating and capital costs. The advantage of a lower true cost generally means a greater capital cost at the outset.[1]

1. p. 149 American Association of School Administrators, Schools For America, 1201 Sixteenth St. N.W., Washington, D.C. 1967

Chapter II
Statutes

CHAPTER II

STATUTES

Statutes Affecting Construction

The statutes contained herein are subject to change and the architect and school district should contact the agency responsible to see if statutory changes have been made and for more detail on any of the regulations.

A. Statutes relating to school construction

V.S.A., T.16, §559	bidding
V.S.A., T.16, §§3448, 3457, 3457a	special education construction
V.S.A., T.16, §3448	general construction
V.S.A., T.18, §1305a	construction for the handicapped
V.S.A., T.18, §§606, 608	health
V.S.A., T.18, §§1301-1306	health
V.S.A., T.20, §§2721, 2722	safety
V.S.A., T.20, §§2791-2794	safety
V.S.A., T.20, §3021	safety

B. Statutes relating to bonding

V.S.A., T.16, §3[illegible]Jb	20% reimbursement on bonded indebtedness
V.S.A., T.16, §§706w-711d	union districts
V.S.A., T.16, §§1752-1770	bonding
V.S.A., T.16, §§4551-4710	municipal bond bank
V.S.A., T.16, §3447	school building construction, state bonds

V.S.A., T.16, §3448a	include amounts from private sources
V.S.A., T.16, §3456	limits of indebtedness
V.S.A., T.24, §1759	limits of indebtedness

C. Statutes relating to warnings

V.S.A., T.16, §422	town school district meeting same day as town meeting
V.S.A., T.24, §702	annual town meeting 1st Tuesday of March
V.S.A., T.16, §422	town school district meeting warned by school directors
V.S.A., T.24, §703	warning posted at least 30 but not more than 40 days before the meeting, (exclusive of the meeting date)
V.S.A., T.24, §704	warning content shall specifically include the business to be transacted in separate articles and shall include articles requested by petitions of 5% of the voters and filed with the legislative branch not less than 40 days before the meeting
V.S.A., T.24, §705	school board directors may warn special meetings on their own or on application of 5% of the voters.

Special meetings shall be warned by: POSTING in three public places and PUBLISHING once a week on the same day of the week for two weeks in a newspaper published in the town or in one of known circulation in the town. The school directors shall annually designate the paper in which such warnings shall be published. The board of directors may rescind the call of a special meeting called by them but not one called on application of 5% of the voters. failure to warn a petitioned meeting shall result in a fine imposed upon the board of directors

V.S.A., T.24, §708

V.S.A., T.24, §726

the Australian ballot system shall not apply to towns under 8,000 population unless they specifically vote it.

Warning a Bond Issue

V.S.A., T.24, §1754

When submitted:

A. Upon petition of 10% of the voters or

B. Upon resolution of 2/3 of the board of school directors

Warning content:

A. Object and purpose for which indebtedness shall be incurred

B. Estimated cost

C. Amount of bond to be issued

D. Fix place and hours of meeting

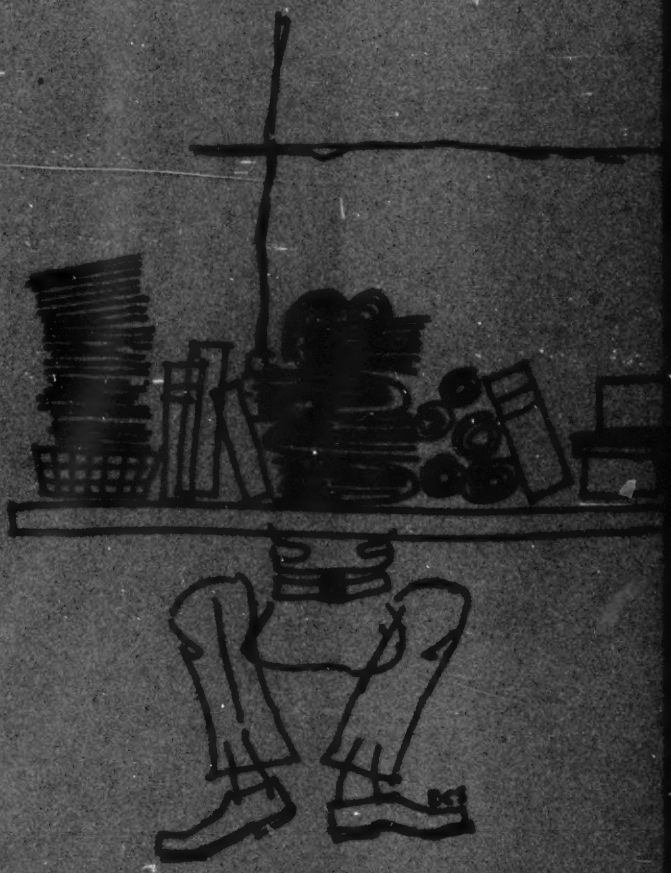
V.S.A., T.24, §1755

Clerk of school board shall: Publish notice once a week for three consecutive weeks on the same day of the week - the last publication to be not less than five nor more than ten days before the meeting date; and notice in five public places within the municipality for two weeks before the meeting shall be posted.

V.S.A., T.24, §1757

Requires a majority of voters present and voting. Voting must be by ballot and this section includes suggested form of ballot. Districts are advised to check various statutes to see if legislative changes occurred.

Chapter III
Financing and Procedures



CHAPTER III

FINANCING AND PROCEDURES

Local Finance Effort

ALL SCHOOL DISTRICTS ARE REQUIRED TO VOTE THE DISTRICT'S SHARE OF THE CONSTRUCTION COST. THE LEGISLATIVE BRANCH (SCHOOL DIRECTORS) MUST FIRST PASS A RESOLUTION WHICH STATES THAT THE PUBLIC INTEREST OR NECESSITY DEMANDS IMPROVEMENTS AND THAT THE COST OF THE SERVICE WILL BE TOO GREAT TO BE PAID OUT OF CURRENT OPERATING FUNDS (§ 1754 - TITLE 24, V.S.A.) (S)

Before a warning for the bond issue is posted, the district should have legal advice to be sure the warning and articles are properly worded and posted. Districts have two choices in the sale of bonds; they may either sell on the open market or through the Municipal Bond Bank which is operated through the State Treasurer's office.

Before a bond issue may be sold, a prospectus of the school district should be drawn up by an attorney and published so that the prospective buyer of the bonds will know something about the history and financial status of the district. Care should be used in drawing up the prospectus, as it affects the speed with which the bonds are purchased and their interest rate. Bonds should be placed on the market at the time that is favorable in the bond market.

The Department of Education through legislation reimburses school districts 20% on its principal and interest payments for the life of the bonds or on short term notes. The important thing to remember is that application for such reimbursement MUST BE FILED WITH THE DIVISION OF ADMINISTRATIVE SERVICES BEFORE SEPTEMBER 30 OF EACH YEAR AND CANCELLED

CHECKS AS PROOF OF PAYMENT MUST BE ATTACHED TO THE APPLICATION FORM. (S) To receive the 20% aid, districts must first receive aid under §§ 3448(a) V.S.A. Title 16.

Procedures to be Followed

A. State's Contribution

Purchase of relocatable and existing structures	30%
General construction elementary and secondary	30%
Special education classrooms	75%
Vocational buildings (NEW-non duplicated facilities)	100%
Bonded indebtedness (each year life of bond - due date for applications September 30)	20%

B. Procedures for Construction Aid

1. Submit to the Division of Administrative Services a letter of intent to apply for construction aid and stating that a committee has been established to explore alternatives for school construction.
2. Submit educational specifications to the Division of Administrative Services for review by the Division of Learning Services. If 75% funding of special education facilities is anticipated, the education specifications must contain a developed program approved by the Division of Special Education and Pupil Personnel Services.
3. Meet with department staff members to explore alternatives and to discuss educational specifications which have been developed.

4. Schedule site inspections by Departments of Education, Public Safety, Highway (where applicable), Agency of Environmental Conservation including Water Resources. The Superintendent of Schools should contact the Division of Administrative Services and that Division will contact the various other state agencies.

5. Confer with department members on preliminary plans. Superintendent, architect and local representatives should be present.

6. Employ an attorney by the school district before site purchase and preparation of warnings for bond issue, to see that all legal requirements are adequately followed.

7. Bond vote.

8. Complete final plans and submit to: Department of Education, Department of Public Safety and Agency of Environmental Conservation. Note: Permit approval required by Highway when access road leads to state highway or state aid road.

9. Request permit approval by the local District Environmental Control Commission. To be done at the same time that final plans are being developed.

10. Submit School Building Aid application.

11. Confer with Division of Administrative Services on final plans.

12. The Division of Administrative Services submits the project to the State Board of Education for approval.

    Important: CONSTRUCTION ON A PROJECT MAY NOT BEGIN PRIOR TO STATE BOARD OF EDUCATION APPROVAL. FAILURE TO ABIDE BY THIS REGULATION WILL NULLIFY THE DISTRICT'S ELIGIBILITY FOR CONSTRUCTION AID. (E)

13. Notify the Division of Administrative Services by letter of the date that construction began and the Division will request the State Board of Education for a first award payment based on the estimated cost of the project.

14. Final inspection of the completed project by:

    a. Department of Education

    b. Department of Public Safety

    c. Agency of Environmental Conservation

    To be present: architect, superintendent, contractors, board member, clerk of works.

15. Notify the Division of Administrative Services that all changes and additions listed at the final inspection have been made and the project is completed.

16. Audit - when cancelled checks are returned, notify the Division of Administrative Services that the district is ready for an audit. Cancelled checks and invoices required.

17. Final award presented to the State Board of Education for approval.

18. School district receives final award from Department of Finance.

Note: The final state aid payment will not be payable to a school district until the building project is completed to the satisfaction of the school directors, state agencies and the architect.

General Rules to be Followed

ALL MATERIALS SUBMITTED FOR REVIEW MUST BE SUBMITTED AT LEAST TWO WEEKS PRIOR TO THE SCHEDULED MEETING DATES. (E)

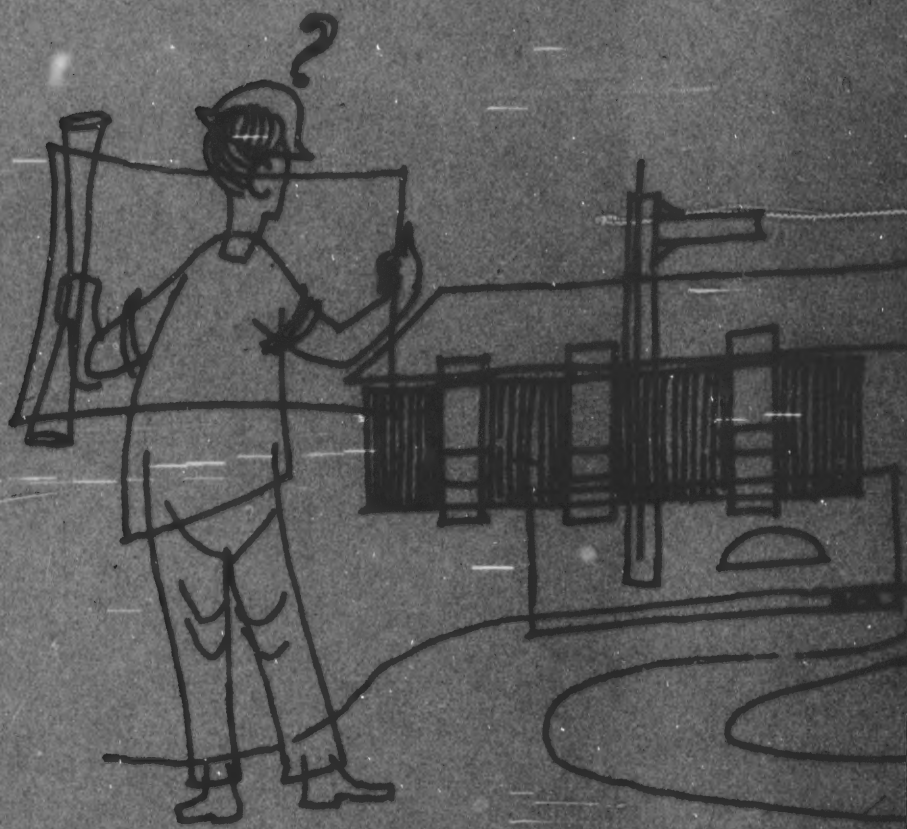
MATERIALS SUBMITTED FOR STATE BOARD OF EDUCATION APPROVAL MUST BE RECEIVED BY THE DEPARTMENT AT LEAST 15 DAYS PRIOR TO A SCHEDULED STATE BOARD MEETING. (E)

To apply for a waiver as suggested in State Board of Education policy page ii, the following are necessary:

1) PREPARE LOCAL DESIGN (PROGRAM) AND SUBMIT TO THE DEPARTMENT OF EDUCATION.
2) SUBMIT A REQUEST FOR APPEARANCE BEFORE STATE BOARD OF EDUCATION TO THE DIVISION OF ADMINISTRATIVE SERVICES.

Chapter IV

School Site and Building Elements



CHAPTER IV

SCHOOL SITE AND BUILDING ELEMENTS

School Site

School activities take place both inside and outside of each school building. Certain educational activities such as physical education, nature study, conservation, picnic areas, etc., should be considered in the site plan. The community's needs in terms of recreational facilities for youth and adults should also be included and will enhance a well planned school site. Both the educational and community purposes to be achieved through the school site should influence to a great extent the size, location, shape and development of land areas for school facilities.

Areas such as commercial developments on areas associated with excessive noise, obnoxious odors or danger to students should be avoided. Aerial, topographic and USDA detailed soil survey maps will greatly facilitate the choice of a site. These maps may bring to light useful areas previously considered unavailable and describe drainage, sewage, subsoil and water availability problems.

SCHOOL DISTRICTS IN CHOOSING SCHOOL SITES ARE REQUIRED TO HAVE SITE INSPECTIONS BY THE DEPARTMENTS OF PUBLIC SAFETY, EDUCATION, AND HIGHWAY. (E) THE AGENCY OF ENVIRONMENTAL CONSERVATION MUST ALSO BE REPRESENTED. (EC) A PERMIT FROM THE STATE HIGHWAY DEPARTMENT FOR ACCESS ROADS LEADING FROM THE SCHOOL SITE

TO A STATE HIGHWAY OR A STATE AID ROAD IS REQUIRED. (H) THE LOCAL DISTRICT HIGHWAY ENGINEER SHOULD BE INVOLVED AND A SITE PLAN TO INCLUDE ACCESS ROADS WITH ELEVATIONS SHOULD BE PREPARED BY THE ARCHITECT AND SUBMITTED AS PART OF THE COMPLETED PLANS AND SPECIFICATIONS. (H) (See No. 4 of Procedures. Page 22).

Appendix H - "A Work Sheet For School Sites and School Site Evaluation Form" will assist districts in rating proposed sites and should be used for this purpose.

THE DEPARTMENT REQUIRES THE USE OF A PROGRAMMED APPROACH TO SCHOOL SITE SIZE, AND THROUGH THIS TECHNIQUE THE LOCAL DISTRICT MAKES THE DETERMINATIONS AS TO SIZE OF THE SITE, WITH THE FINAL PLANNED SITE UTILIZATION APPROACH AND SIZE APPROVED BY THE STATE DEFARTMENT OF EDUCATION. (E) It is recommended that sufficient land be acquired for further additions. Appendix E, a working paper, is included in this guide and should be used. Appendix F, guide to space and area needs, follows the working paper. As a guideline the State Board of Education offers the following site sizes for consideration:

1. Elementary Schools -- 10 acres plus one additional acre for each 100 pupils of projected ultimate maximum enrollment.
2. Junior High - Middle Schools -- 20 acres plus one additional acre for each 100 pupils of projected ultimate maximum enrollment.
3. Senior High School -- 30 acres plus one additional acre for each 100 pupils of projected ultimate maximum enrollment.

Land areas on which the district may hold a long term lease or land owned by the town which students have access to without restriction during the school day may also be included as part of the school site. Depending upon the use made of certain areas, all land need not necessarily be adjoining. When the site has been chosen, the district should utilize the services of an attorney and a surveyor to prepare deeds, make a title search and survey of the site. The State Board of Education does not grant state construction aid for site purchase, but it does give assistance in site preparation, development and landscaping.

The Department of Education recommends the use of a citizens' committee, which includes students, architect, school administrators, teachers and other interested people in evaluating proposed sites. See Appendix A

Building Elements

The necessity of providing space for varied and changing school programs has resulted in new design and construction methods. Conventional construction methods are still employed in most school construction; however, concepts of modular planning, prefabrication and systems design should be explored. In all school design the provision of flexibility must be recognized. The double-loaded corridor design with fixed walls between learning spaces cannot provide flexibility, thus school designs have been replaced by the use of non-load bearing walls and partitions that are movable and/or demountable. Utilities should be installed to provide for maximum flexibility.

The Department of Education encourages flexibility and the use of furniture in large open spaces as vision barriers between learning spaces. Folding or demountable partitions between two or more classrooms does not in itself provide flexibility, since the resultant large area may be of a shape that limits rather than increases educational usefulness. Many buildings today are being designed as a shell with the possibility of changing interior spaces as programs and needs change. See Appendix A, State Aid for "Open" school facilities.

Single versus multi-story design often is discussed. Preference of one system over the other cannot be made. Educationally a multi-story building is as adequate as a single story building. Maintenance of multi-story buildings generally is higher than that of single-story. From a capital cost standpoint the difference is negligible. The cost of expanding or remodeling multi-story buildings is higher. The type of structure depends a great deal on the availability of an adequate site. EVERY SCHOOL BUILDING, WHETHER IT BE SINGLE OR MULTI-STORY, TO THE EXTENT PRACTICABLE, MUST COMPLY WITH STANDARDS SET FORTH IN A-117-1-1961 American Standards Association, "Making Facilities Accessible to and Usable by the Physically Handicapped". Title 18 § 1305a. (S)

Schools should be community institutions and as such the community should be encouraged to use the facilities for community activities. All public assembly areas should be usable and

accessible - independent of the remainder of the building and preferably should be able to be used for community activities concurrently with school operation with minimum interference. Since the school site should also be used by the comumunity, it is recommended that one set of toilets be available having an exterior entrance or located in close proximity to an area of the building which has an exterior entrance.

Citizens on school planning committees must bring an open-minded attitude to each situation, giving all possibilities careful consideration.

Clerk of Works

V.S.A., Title 16 § 3448 REQUIRES THE SCHOOL DISTRICT TO MAKE ARRANGEMENTS FOR THE SUPERVISION OF THE ACTUAL CONSTRUCTION BY A PERSON COMPETENT IN THE BUILDING TRADES. (S)

Structural and Material Changes

THE STATE DEPARTMENT OF EDUCATION AND OTHER RELATED AGENCIES REQUIRE NOTIFICATION OF ALL STRUCTURAL OR MATERIAL CHANGES WHERE THE CHANGE CONTEMPLATED IS A PART OF OR VITALLY AFFECTS A STRUCTURAL SYSTEM OR MATERIAL COVERED BY A MANDATORY REQUIREMENT OF THIS PUBLICATION AND ITS ADDENDA. (E)

Lighting

The quality of light is as important as the quantity. All light should be glare free. Glare can be controlled in two places, at the source of the light and at the task (the object being looked at). The control at the source, baffles or the equivalent, are used so that direct light from the source will not be visible to the student engaged in normal activities. Glare can be controlled

at the task by avoiding glossy paints on walls and ceilings and the use of glossy finishes on furniture. (See page 55 - lighting requirements.)

Acoustics

School should be located away from noise producing areas. Interior of buildings shall be properly acoustically treated. Carpeting is recommended.

Television (ETV)

It is recommended that all new school construction have conduit installed at the time of construction for E.T.V.

Landscaping

Attractive school grounds enhance and create pride in the school and community. The Department of Education recommends that local interest be encouraged to assist with plantings of shrubs, trees and other ground-covering plants. Community involvement in the landscaping of the school site will save the district money as well as instill community pride in the school.

Corridors

SHALL NOT BE LESS THAN 6 FEET WIDE AND MUST TAKE INTO CONSIDERATION TRAFFIC FLOW. NO OBSTRUCTIONS ARE PERMITTED IN THE CLEAR SPACE. (P.S.)

Maintenance Facilities - Janitorial

CUSTODIAL CLOSETS AND SERVICE SINKS WITH HOT AND COLD RUNNING WATER CONVENIENTLY LOCATED ARE REQUIRED ON EACH FLOOR. (E&EC) It is recommended that shower, locker and workspace be provided for custodial staff.

Storage

STORAGE FOR OUTDOOR EQUIPMENT IS REQUIRED (E) AS IS SEPARATE STORAGE FOR FLAMMABLE MATERIALS. (PS) INCINERATORS MUST BE OF A TYPE APPROVED BY THE ENVIRONMENTAL PROTECTION DIVISION. (EC) It is recommended that school districts investigate the use of compactors or waste grinders to take care of waste materials.

Classrooms - Learning Space

A MINIMUM OF 30 SQUARE FEET OF USABLE FLOOR SPACE PER CHILD PER LEARNING SPACE - EXCEPT KINDERGARTEN SHALL PROVIDE 50 SQUARE FEET OF USABLE FLOOR SPACE PER PUPIL PER CLASSROOM. (E)

WORKSPACE WITH RUNNING WATER IS REQUIRED IN KINDERGARTEN ROOMS. (E) Workspace with running water should also be available throughout the facility for student use.

Instructional Resource Center

The instructional materials center should be a pivotal center where students may do research, study, discuss ideas, have conferences, and view films and film strips as well as producing materials.

To provide adequate space for the preparation and use of these materials sufficient space must be available. THE READING ROOM SHALL BE OF ADEQUATE DESIGN TO SUPPORT THE EDUCATIONAL PROGRAM. (E) Closed circuit distribution T.V. system should be available.

THE STATE DEPARTMENT REQUIRES THAT CARPETING OR SOME OTHER SIMILAR ACOUSTICAL FLOOR COVERING BE INSTALLED IN ALL INSTRUCTIONAL RESOURCE CENTERS. SUFFICIENT STORAGE SPACE MUST ALSO BE AVAILABLE. (E)

The following are required minimums; however, the department recommends that Instructional Resource Centers be considerably larger than what is required.

1 - 100 PUPILS	SHELVING LARGE ENOUGH FOR 20 BOOKS PER PUPIL. STORAGE ROOM MUST ALSO BE AVAILABLE.
OVER 100 PUPILS	FOUR SQUARE FEET OF FLOOR SPACE PER PUPIL SHALL BE PROVIDED IN THE RESOURCE CENTER PLUS A WORKROOM OF ONE-HALF SQUARE FOOT PER PUPIL AND ONE-HALF SQUARE FOOT PER PUPIL STORAGE AREA. OFFICE SPACE MAY BE AVAILABLE IN THE WORKROOM.

AN AUDIO-VISUAL LABORATORY MUST BE PROVIDED IN ALL SCHOOLS WITH 5 OR MORE CLASSROOMS. THIS ROOM MAY BE INCORPORATED WITH THE WORKROOM. THE MINIMUM SIZE OF THE WORKROOM, IF IT IS TO BE USED AS AN AUDIO-VISUAL LABORATORY, SHOULD BE AT LEAST 250 SQUARE FEET. (E)

It is recommended that conference or seminar rooms be available directly off the library where students may meet with other students or teachers. These rooms should have a minimum of 120 square feet.

Seating capacity may be in the form of carrels. Both wet and dry carrels should be available.

Industrial Arts Facilities

Industrial Arts is that part of general education that is devoted to the study of the tools, materials, processes and products of our American industries. As such, it acquaints the students, both boys and girls, with the technological society in which they live and in which they make their living.

It is recommended that an industrial arts curriculum include general metals, electronics, mechanical drawing, graphic arts, power mechanics and woodwork.

The size of the industrial arts shop is dependent upon the number of students enrolled in the school. It may vary from 2400 square feet in a small secondary school (0 - 249 enrollment) to over 3200 square feet in a larger high school (250 - 499 enrollment). In addition, a drafting room with a minimum of 1200 square feet is recommended. In secondary schools (7 - 12 or 9 - 12) with enrollments of 500 or more, a multi-lab concept is recommended. Such a concept will allow for the planning and development of unit labs to support a broader curriculum to meet the interests and educational needs of a greater number of students. Provisions must be made for teachers' offices, ample storage, classrooms and special service facilities

tailored around the equipment to be installed. Square footage determinations for the latter are based on 25 to 40 square feet per student.

Consumer and Homemaking Education Facilities

A homemaking department should express the educational program that goes on within it and the philosophy of the profession.

This area of education is designed to help individuals and families improve home environments and the quality of personal and family life, and includes instruction in food and nutrition, child development, family relationships, clothing and textiles, housing and home furnishings, family health, and management of resources, with emphasis on selection, use and care of goods and services, budgeting and other consumer responsibilities.

It is best if the department can be located on the ground floor. Small children from the play school should be able to enter the building and go to the playground directly from the classroom. If evening classes are held, this location is also preferable.

Facilities and space requirements are dependent upon the curriculum. However, IN A SINGLE CLASSROOM DEPARTMENT A MINIMUM OF 1200 SQUARE FEET IS REQUIRED. (E) If the homemaking department has more than one room, each room shall have its own entrance but be adjacent to the others. Flexibility in arrangement is important to the overall program. Provision should be made for easy darkening of the rooms, special wiring for electric

stoves, ample electrical outlets (conveniently placed), storage space (cabinets, under and over), and space for reference books and periodicals. In some programs it might be feasible to have access to a house outside the school facility; in others, rooms of a house might be set up within the facility (with the flexibility of moving equipment in and out).

Regardless of the space planned, it must be flexible enough so that it may fit the needs of a changing curriculum.

Business Education

State business education programs are preparing today's pupils for tomorrow's world, a world that very largely is an unknown quantity. Since tomorrow is an unknown quantity, business education programs must deal with past truths, present realities, and future possiblities. Needless to say, this is a far-reaching challenge that will tax facilities and abilities of schools and personnel. There are several basic facility considerations that can add a new dimension to existing and proposed programs. They are:

1. Flexibility: This is an essential ingredient in any program but especially so in business education where future success may depend on partial or complete modification of program or personnel factors.
2. Classrooms: A high degree of flexibility can be achieved by fitting programs into classrooms that are neither too large nor too small. To a great extent, the classrooms need not deviate from the general classroom. However, a different approach may be required because of large enrollments, special

programs, or unique community conditions.

3. Storage: Overhead storage can be built into new and existing facilities to more effectively utilize space that is usually overlooked during planning. Floor storage in cabinets can be movable.
4. Learning Stations: Movable furniture can be used in nearly all classrooms; mobility, therefore, can open other areas for business education programs.
5. Plumbing: Clean-up sinks should be available in the classroom as needed. Pipes should be readily accessible for the installation of needed sinks.
6. Electric Power: Many classrooms require a great deal of power for the many electrically-powered machines required by the program. Therefore, classrooms should be designed with a surplus of power; and the use of strip outlets and extension cords should be avoided.
7. Sound Conditioning: The noise of the machines can be controlled through acoustical tile, drapes, room placements, and special problems caused by noise.

Special Education Facilities

The purpose of special education construction is to increase the capacity of our schools to provide educational services for handicapped children.

Special education facilities are defined as those facilities which are constructed to provide space within which education personnel can teach or provide supportive services to handicapped children.

In order to meet the needs of handicapped children effectively and safely, the space provided by special education construction should meet the following conditions:

a) Learning space is located in a regular school building adjacent to classrooms for similar age groups. The exception is where trainable children are beneficially located in a sheltered workshop.

b) The facility includes sufficient space for instructional requirements to meet special educational goals.

c) The design of the facility has no architectural barriers and maximizes independent learning and cooperative participation in the school program.

d) The facility is sufficiently flexible to accommodate multi-age groups.

e) The facility allows for maximum use of a variety of media to individualize instruction.

f) Each open classrooom allows space which is comparable to other classrooms for similar age groups.

g) Each closed classroom allows approximately 900 square feet for learning space, 100 square feet for storage and includes movable partitions where practical.

h) Space for a secondary special education program in diversified occupations includes approximately 4300 square feet of laboratory and related space.

i) Space for supportive services to children with any learning, behavior, or speech disorders includes up to 1300 square feet for each 250 pupils of the school population.

A written justification for the use of the space to be constructed should be filed with Special Educational Services in order to obtain the Certificate of Assurance which is submitted with the application for the 75% aid.

The justification should explain the need for the construction, identify the pupils who will be educated in the new facility, and outline the proposed program. The construction of special classrooms for mentally handicapped children usually requires interdistrict planning and agreement prior to approval to assure that regional needs are met.

Pupil Personnel Services Facilities

Space for pupil personnel services is located to take full advantage of availability to students, parents, teachers, and administrators, and to facilitate maximum coordination and cooperation between pupil personnel services staff, other school personnel, and community agencies.

This unit is designed for maximum flexibility and practicality and consists of approximately 130 square feet for each staff member, a reception and secretarial suite, secure records storage space, a conference area for small group meetings. Counseling rooms are to be constructed to insure privacy.

Science Laboratories

LABORATORIES FOR SCIENCE PROGRAMS MUST CONTAIN A MINIMUM OF 900 SQUARE FEET WITH ADJACENT STORAGE AND PREPARATION AREA OF AT LEAST 150 SQUARE FEET. (E)

ROOMS USED AS A COMBINATION LABORATORY AND RECITATION ROOM SHALL BE A MINIMUM OF 1200 SQUARE FEET. (E)

Consideration should be given to:

a) Wiring for 220 volt outlets and converter for direct current.

b) Fume hood over demonstration tables.

c) Table tops - resin impregnated stone of solid resin to prevent damage by spilled chemicals.

d) Hot and cold running water.

e) Terrarium and animal case for biological study.

f) Sinks shall be provided and conveniently located.

Art Area

Junior and Senior High art rooms should be located in close proximity to the homemaking and industrial arts area because of the interrelationship of these areas. Natural light should be of even quality. Facilities in these rooms should be flexible and adaptable to a wide range of activities. If a kiln is installed, IT MUST BE OF UNDERWRITERS' LABORATORIES APPROVED TYPE AND PLACED IN A LOCATION PROPERLY PROTECTED FROM FIRE. (PS) ADEQUATE STORAGE MUST BE PROVIDED AS WELL AS A SUPPLY ROOM WHICH SHALL ADJOIN THE ART ROOM. (E)

There should be good working surface and equipment provided, such as art tables, work counters, easels, work bench, clay bins, kiln, potter's wheel, work sinks, picture files, exhibit cases, multiple electric outlets, large tack and peg boards. The room should be divided into areas for two dimensional work as well as light wood working, metal work and for print making.

Information may be obtained in the planning stages from the Art Consultant in the Department of Education as well as the booklet "Planning Facilities for Art Instruction," published by the National Art Education Association.

It is recommended that 50 square feet of usable floor space be available per pupil in Art rooms.

Auditorium Area

The size of the auditorium shall be governed by the probable future enrollment and the projected amount of community use.

Multipurpose Rooms

Multipurpose rooms are to be used for physical education, cafeteria, public activities and projected recreation. The size of the multipurpose room will depend upon the size of the physical plant. A permanent stage is not recommended. ADEQUATE STORAGE MUST BE PROVIDED FOR PHYSICAL EDUCATION EQUIPMENT IN ADDITION TO STORAGE FOR TABLES AND CHAIRS. THE STORAGE AREA SHALL BE EQUIPPED WITH EQUIVALENT OPENING OF DOUBLE DOORS. (E)

THE HEIGHT OF THE CEILING SHALL BE AT LEAST 12 FEET. SCHOOLS WITH AN ENROLLMENT OF 60 STUDENTS OR LESS REQUIRE 1200 SQUARE FEET OF FLOOR SPACE. SCHOOLS WITH ENROLLMENT OF MORE THAN 60 STUDENTS REQUIRE 2400 SQUARE FEET OF FLOOR SPACE.

The multipurpose room should be available for use by the public without necessarily opening the entire school.

Physical Education

Gymnasium: Should be accessible from the outside. A CLEAR CEILING HEIGHT OF A MINIMUM OF 22 FEET IS REQUIRED. THE OFFICIAL SIZE BASKETBALL COURT IS 50 x 84 FEET AND FOR JUNIOR HIGH SCHOOLS 42 x 74 FEET. (E) This space does not take into account seating space. At least six feet of space between bleachers and sidelines should be available. STORAGE MUST BE PROVIDED. (E) Since a complete physical education program should encompass other activities such as fencing, wrestling, golf, archery, volleyball, etc., auxiliary rooms may be required. It is recommended that some type of folding partition be installed so that more than one class of physical education can be in progress at any one time.

Facilities for physical activities shall be of sufficient size to meet the activity to be enjoyed. It is recommended that the various sizes suggested in Appendix F of this document be followed.

Locker and Shower Rooms

Locker and shower rooms off of multipurpose rooms in elementary schools will depend upon the scope of the physical education program and the extent to which the community will utilize the facility.

It is recommended that dressing and locker space be made available for members of each sex. The type of locker system used, the size of the peak load to be accommodated and the type of group to be served are the factors which determine the size of the locker room.

Food Service Area

Food service facilities should be planned in terms of the type of school, size of school, and types of food service to be offered students and adults. Key consideration should be to enable smooth working, effective service under sanitary conditions.

The food service facilities should be located on the ground floor. Minimum requirements are:

Kitchen — The Department recommends centralized kitchens for food preparation wherever possible. Nonetheless, centralized or standard kitchens shall be of sufficient size to prepare food for the number of meals to be served. 3-COMPARTMENT SINKS REQUIRED. (EC)

Storage — 1/2 SQUARE FOOT PER MEAL SERVED PER DAY - MINIMUM SIZE 60 SQUARE FEET - SHALL BE MECHANICALLY VENTILATED (E) and should be located on an outside wall.

Dining Area — 10 TO 12 SQUARE FEET PER PERSON SERVED, AT THE LARGEST SEATING. Recommend that the dining area be used for other educational purposes.

Vocational Education Facilities

Facilities for vocational education should generally be located on the ground floor for easy access to supply and to the people who may use the facilities after school hours. Consideration might also be given to locating these facilities in a separate building in order to reduce the transmission of noise into quiet areas of the school. If a separate building is considered, the problems and costs of extra heating, ventilation and plumbing should be carefully studied.

The recommended floor areas for the various shops enrolling 16 students per class are as follows:

1.	Machine shop	3200 square feet
2.	Auto mechanics shop	3200 " "
3.	Cabinet making, carpentry & multiwork	3200 " "
4.	Cosmetology laboratory	1200 " "
5.	Drafting room	1200 " "
6.	Electrical, radio & television shop	1600 " "
7.	Plumbing, heating & sheet metal shop	2400 " "
8.	Power stitching shop	1200 " "
9.	Practical Nurse Laboratory	1400 " "
10.	Printing shop	2400 " "
11.	Agricultural shop	2400 " "
12.	Food trades shop	1800 " "

Vocational education should be considered as a school within a school, in that many of the facilities found within the school

should also be found within the vocational facilities. Instructors' offices with access to the shops and classrooms will be necessary and should contain 135 square feet of floor area. Toilets, washrooms and lockers should be provided for the automotive and agricultural students and others, when appropriate, to answer the needs of personal hygiene.

The need for special finishing rooms within the shop areas should be examined. Special rooms would be called for in auto painting, wood finishing, etc. The drafting facility should be located in a quiet area of the vocational section and preferably it should have a northern orientation.

Each shop has its own special problems of lighting, ventilation, electrical service, safety, plumbing and dust exhaust. These problems should be dealt with carefully.

Storage of new materials and storage of partially completed projects must be provided within each department. A storage area of 200 to 250 square feet will be adequate for most departments.

Laboratories should be included as an integral part of some vocational shops, such as the agricultural and food trade shops. These laboratories should be of standard classroom size and equipped as dictated by curriculum requirements.

Before any plans are started, a Vocational Education Advisory Committee should be formed. This committee should be made up of people who are receiving their income from a job related to the program under consideration. The committee should conduct various

types of needs surveys in order to justify the program guidelines and determine facility and equipment needs. State consultants in the Division of Vocational-Technical Education are available to work with committees.

Driver Education

One classroom should be allocated for driver education for every 200 pupils enrolled in the course. This would average about one classroom for an 800 pupil high school.

Administration - Teachers

ADEQUATE OFFICE SPACE FOR THE PRINCIPAL AND CENTRAL STAFF SHALL BE AVAILABLE. (E)

A workroom for teachers should also be included.

Vault

IT IS REQUIRED THAT A FIREPROOF VAULT OR FIREPROOF FILES, FOR STORAGE OF STUDENT RECORDS, BE INCLUDED IN THE BUILDING DESIGN. (E)

Physically Handicapped

V.S.A., Title 18, § 1305(a). - Facilities for handicapped.

> "A person shall not construct or permit construction of a building to be used by the public if the state, a county or municipality is paying any part of the cost of its construction, unless at least one of its entrances is at ground level or is accessible by a ramp. The building construction specifications at the time of construction shall, so far as is practicable, be equal to the American Standards Association specifications A-117-1-1961, entitled 'Making Buildings and Facilities Accessible to, and Usable by the Physically Handicapped'.

The state board of education shall enforce this section when school funds are used; the department of public safety when other public funds are used".

1. ONE MAIN ENTRANCE AT GROUND LEVEL OR RAMPED. (S)
2. MULTI-STORY BUILDINGS - ELEVATOR.
3. RAMPS
   a) NON-SLIP MATERIAL
   b) GRADE 8% - 1:12
   c) HANDRAILS PROVIDED, 32 INCHES HIGH FULL LENGTH OF RAMP
   d) IF RAMP IS 30 FEET LONG OR LONGER, REST PLATFORMS SHOULD BE PROVIDED
4. Doors - 3 foot opening, should not exceed an 8-pound pull and handles should be properly located.
5. TOILET STALL - AT LEAST ONE TOILET FOR PARAPLEGIC OF EACH SEX ON EACH FLOOR
   a) THREE FEET WIDE
   b) MINIMUM OF 4 FEET 10 INCHES DEEP
   c) DOOR 32 INCHES AND SWING OUT
   d) SEAT 19 INCHES FROM FLOOR
   e) GRAB RAILS 33 INCHES FROM FLOOR AND EXTEND 4 FEET 4 INCHES FRONT TO BACK; WALL MOUNTED TOILET IS BEST
   f) MIRRORS AND SHELVES SHALL BE PROVIDED ABOVE LAVATORIES AT A HEIGHT AS LOW AS POSSIBLE AND NO HIGHER THAN 40 INCHES ABOVE THE FLOOR - TOP OF SHELF AND BOTTOM OF MIRROR
   g) TOILETS FOR PARAPLEGICS SHALL HAVE AN APPROPRIATE NUMBER OF TOWEL RACKS, TOWEL DISPENSERS AND OTHER DISPOSAL AND DISPENSER UNITS MOUNTED NO HIGHER THAN 40 INCHES FROM THE FLOOR OR THE BOTTOM OF THE BASE OF THE UNIT

6. Water fountain - at least one water fountain should be accessible to and usable by the physically disabled on each floor.

7. Warning signals in special education classrooms - visual signals should be accompanied by simultaneous audible signals for pupils with hearing difficulties (fire detection)

8. AT LEAST ONE ENTRANCE TO THE BUILDING AND THE INTERIOR ROOMS SHALL HAVE THRESHOLDS FLUSH WITH THE FLOOR (S)

9. The building should have switches and controls for light, heat ventilation, windows, draperies, elevators, fire alarms, and similar controls of frequent or essential use within reach of individuals in wheelchairs. (E)

Standards Relating to Relocatable Units

Applications submitted for approval must be made in accordance with established procedures under Title 16, V.S.A., § 3448, as amended.

Definition

A relocatable unit is a supplementary educational facility, generally manufactured or fabricated off site, moved to and erected at the desired location. The unit may be a single classroom or a combination of classrooms and is classified as portable, divisible and/or demountable.

Plans

ALL PLANS SHALL BE SUBMITTED TO THE FOLLOWING AGENCIES FOR REVIEW AND APPROVAL:

Department of Education, Montpelier

Department of Public Safety, Montpelier,

Agency of Environmental Conservation (Health and Water Resources), Montpelier, and

Local authorities having jurisdiction.

Applications

APPLICATION FORMS SHALL BE SUBMITTED TO THE STATE BOARD OF EDUCATION FOR APPROVAL PRIOR TO ACTUAL PURCHASE OF UNITS. FORMS WITH ALL EXHIBITS ATTACHED SHALL BE SUBMITTED NO LATER THAN 15 DAYS PRIOR TO STATE BOARD OF EDUCATION MEETINGS. (E)

Architect - Engineer

SCHOOL DISTRICTS ARE REQUIRED TO EMPLOY A CONSULTING ENGINEER OR ARCHITECT, REGISTERED IN VERMONT, NOT IN THE EMPLOY OF THE COMPANY SUPPLYING THE UNITS, (TO SEE THAT ALL REQUIREMENTS FOR INSTALLATION ARE MET.) (THE COMPANY SUPPLYING THE UNITS SHALL CERTIFY THAT STRUCTURAL REQUIREMENTS ARE ALSO MET.) Prior to receipt of final state aid payment, the CONSULTING ENGINEER OR ARCHITECT SHALL SUBMIT IN WRITING TO THE DEPARTMENT OF EDUCATION, DIVISION OF ADMINISTRATIVE SERVICES, THAT THE UNITS HAVE BEEN INSTALLED AND MEET ALL ESTABLISHED REGULATIONS. (E) A STATEMENT FROM THE DEPARTMENT OF PUBLIC SAFETY AND ENVIRONMENTAL PROTECTION DIVISION THAT THESE REQUIREMENTS HAVE BEEN MET IS ALSO REQUIRED. (E)

Inspection

THE DEPARTMENT OF PUBLIC SAFETY REQUIRES AN INSPECTION OF ALL UNITS INSTALLED. (PS)

Basic Standards and Structural Design for Relocatable Units

The following minimum regulations shall be met:

1. CLASSROOMS - AT LEAST 30 SQUARE FEET OF USABLE FLOOR SPACE PER CHILD PER CLASSROOM. (E)
2. FLOOR TO CEILING HEIGHT - 9 FEET. (EC)
3. SLOPING CEILINGS - WILL BE APPROVED IF THE CUBIC AIR SPACE

IN CLASSROOMS AVERAGES AT LEAST 225 CUBIC FEET PER PUPIL. (EC)

4. INTERIOR LIGHTING SHALL BE 70-100 FOOT CANDLES AT DESK TOP LEVEL. (EC)
5. APPROPRIATE FIRE EXTINGUISHERS SHALL BE PROVIDED. (PS)
6. LIVE FLOOR LOAD - 40 POUNDS PER SQUARE FOOT IN CLASSROOMS AND 100 POUNDS PER SQUARE FOOT IN CORRIDORS. (E)
7. LIVE ROOF LOAD - 50 POUNDS PER SQUARE FOOT. (E)
8. VENTILATION - NOT LESS THAN 15 CUBIC FEET OF FRESH AIR PER MINUTE FOR EACH PUPIL WITH AN EQUAL AMOUNT OF AIR EXHAUSTED FROM EACH CLASSROOM WHEN THE OUTSIDE TEMPERATURE IS 20° F. OR ABOVE. OUTSIDE TEMPERATURE BELOW 20° F., THE MINIMUM AIR CIRCULATION MAY BE REDUCED TO 4 CUBIC FEET PER MINUTE PER PUPIL. (EC)
9. ALL FURNACE EQUIPMENT SHALL BE CONTAINED IN A ONE-HOUR FIRE RESISTANT ENCLOSURE WITH ADEQUATE EXTERIOR VENTILATION AND REQUIRED FIRE DAMPERS. OPEN REGISTERS BETWEEN CLASS-ROOM AND FURNACE ROOM ARE PROHIBITED. (PS)
10. TWO EXITS SHALL BE AVAILABLE FROM EACH UNIT, ONE OF WHICH LEADS DIRECTLY TO THE OUTSIDE. (PS) ALL EXTERIOR DOORS SHALL BE EQUIPPED WITH PANIC HARDWARE. (E)
11. THE ELECTRICAL SYSTEM SHALL COMPLY WITH THE NATIONAL ELEC-TRICAL CODE AND BOTH THE SYSTEM AND THE BUILDING SHALL BE PROPERLY GROUNDED. (LI)
12. EVERY EDUCATIONAL BUILDING SHALL HAVE AN APPROVED MANUALLY OPERATED FIRE ALARM SYSTEM. (PS) It is recommended that an automatic fire detection system or sprinkler system be in-cluded with the manual pull station.
13. CARPETING AND ITS UNDERPADDING SHALL BE CLASS A IN EXITS AND ACCESS TO EXITS AND MAY BE CLASS A, B OR C IN OTHER AREAS. (PS)

14. THE HEATING EQUIPMENT SHALL BE EQUIPPED WITH A THERMAL CUT-OFF AND FUEL SHUT-OFF SAFETY DEVICE, TOGETHER WITH AN EMERGENCY SHUT-OFF SWITCH TO THE TOTAL UNIT, TO BE LOCATED IN THE CLASSROOM AREA. (PS)

15. EVERY INTERIOR CORRIDOR SHALL BE OF CONSTRUCTION HAVING NOT LESS THAN A 1-HOUR FIRE RESISTANCE RATING, AND ALL OPENINGS THEREIN PROTECTED ACCORDINGLY. ROOM DOORS MAY BE 1 3/4-INCH SOLID BONDED CORE WOOD DOORS OR THE EQUIVALENT. SUCH CORRIDOR PROTECTION SHALL NOT BE REQUIRED WHEN ALL CLASSROOMS SERVED BY SUCH CORRIDORS HAVE AT LEAST ONE DOOR DIRECTLY TO THE OUTSIDE OR TO AN EXTERIOR BALCONY OR CORRIDOR AS IN 9-126 of NFPA No. 101, Life Safety Code 1970. (PS)

16. ALL INSULATION USED IN THE CONSTRUCTION OF THE UNIT SHALL BE A FIRE RESISTANT TYPE. (PS)

17. INTERIOR FINISH SHALL BE CLASS A IN CORRIDORS, STAIRWAYS AND OTHER MEANS OF EGRESS, AND MAY BE CLASS B OR C ELSEWHERE IN ACCORDANCE WITH THE PROVISIONS OF SECTION 6-2 OF NFPA No. 101, Life Safety Code 1970. (PS)

18. ANCHORING - EACH UNIT SHALL BE FASTENED DOWN AT EACH CORNER WITH NOTHING LESS THAN ONE-HALF INCH CABLE HAVING A TENSILE STRENGTH OF NOT LESS THAN 3000 POUNDS, CONNECTED TO A STEEL ROD NOT LESS THAN ONE-HALF INCH SECURELY ANCHORED TO A CONCRETE BLOCK AT LEAST 2-1/2 FEET WIDE BY 5 FEET LONG AND ONE FOOT THICK COVERED WITH NOT LESS THAN 4-1/2 FEET OF SOIL. (EC)

19. PARAPLEGICS - SINGLE UNITS OR COMBINATION UNITS MUST MEET THE STANDARDS AS SET FORTH IN A-117-1-1961, American Standards Association (Making Facilities Accessible to and

Usable by the Physically Handicapped), 18, V.S.A., § 1305a. (S)

20. UNDER FLOOR VENTILATION SHOULD BE PROVIDED. (EC)

21. EACH PORTABLE CLASSROOM BEING CONTEMPLATED SHOULD COMMAND A REVIEW OF AVAILABLE TOILETS WHEN TOILETS ARE NOT INCLUDED. WHEN A SOIL SUB-SURFACE LEACH SYSTEM SERVES THE MAIN SCHOOL, TO AVOID OVERTAXING THAT SYSTEM, ADDITIONAL SEPTIC TANK AND LEACH FIELD AREA CAPACITY SHOULD BE DESIGNED AND CONSTRUCTED WHEN THE BASIC SCHOOL DESIGN POPULATION ON WHICH THE SEWAGE DISPOSAL SYSTEM WAS BASED IS EXCEEDED BY 25%; OR, WHEN THE ORIGINAL SYSTEM FAILS, WHICHEVER FIRST OCCURS. (EC)

22. ALL CORRIDORS SHALL HAVE A MINIMUM WIDTH OF EIGHT FEET. (E) THE INTERIOR FINISH SHALL BE CLASS A AND ONE HOUR RATED. A FIRE RESISTANT RATING OF AT LEAST ONE HOUR SHALL BE MAINTAINED BETWEEN CLASSROOMS AND CORRIDORS. (PS)

Soil Tests

It is recommended that soil tests be taken prior to installation of the units to assure proper foundation work if a foundation is to be installed.

A partial list of regulations enforced by the Departments of Public Safety, Labor and Industry and the Agency of Environmental Conservation are included in this booklet as a convenience to local planning committees. Superintendents, architects and board members are encouraged to contact the appropriate State Agency for a complete listing of their regulations.

Including these lists of regulations in this document in no way indicates that the State Board of Education endorses or is in agreement with some or all of the regulations.

Addendum I

District Environmental Control Commission

District Environmental Commission Offices

ADDENDUM I

DISTRICT ENVIRONMENTAL CONTROL COMMISSION

Five copies of a description of the proposed development of subdivision, showing the intended use of the land and the proposed improvements thereon, WHICH SHALL INCLUDE THE FOLLOWING:

1. PLANS AND SPECIFICATIONS:
   a. DETAILED PLAN OR PLOT PLAN OF THE PROPOSED SUBDIVISION OR DEVELOPMENT, DRAWN TO SCALE, SHOWING THE LOCATION AND DIMENSIONS OF THE LAND INVOLVED, ALL LOTS, STREETS, WATER AND SEWER SYSTEM OF INTENDED.
   b. PROPOSED SITES FOR INDIVIDUAL WATER AND SEWAGE FACILITIES OF INTENDED.
   c. PARKS, PLAYGROUNDS, PARKING AREAS, WATER COURSES, AND OTHER BODIES OF WATER, NATURAL OR ARTIFICIAL, EXISTING AND INTENDED.
   d. THE CONTOUR OF THE LAND INVOLVED DRAWN ON A SCALE OF FIVE FOOT CONTOUR INTERVALS.
   e. AN OFFICIAL COUNTY HIGHWAY MAP (or maps) SHOWING THE LOCATION AND EXTENT OF THE SUBDIVISION OR DEVELOPMENT ACCURATELY AND TO SCALE. (EC)

District Environment Commission Offices

1. For Rutland County:
   Coordinator, 9 Merchants Row, Rutland.
2. For Windham County and parts of Bennington and Windsor Counties:
   Coordinator, Route 106, Precision Park, North Springfield.
3. For parts of Windsor, Addison and Orange Counties:

Coordinator, Route 106, Precision Park, North Springfield.

4. For Chittenden County and most of Addison County:

   Coordinator, P O Box 108, Essex Junction.

5. For Lamoille and Washington Counties and part of Orange County:

   Coordinator, Building 4 North, Vermont State Hospital, Waterbury.

6. For Grand Isle and Franklin Counties:

   Coordinator, County Agricultural Center, Morrisville.

7. For Caledonia, Essex and Orleans Counties:

   Coordinator, 44 Eastern Avenue, St. Johnsbury.

8. For Bennington County:

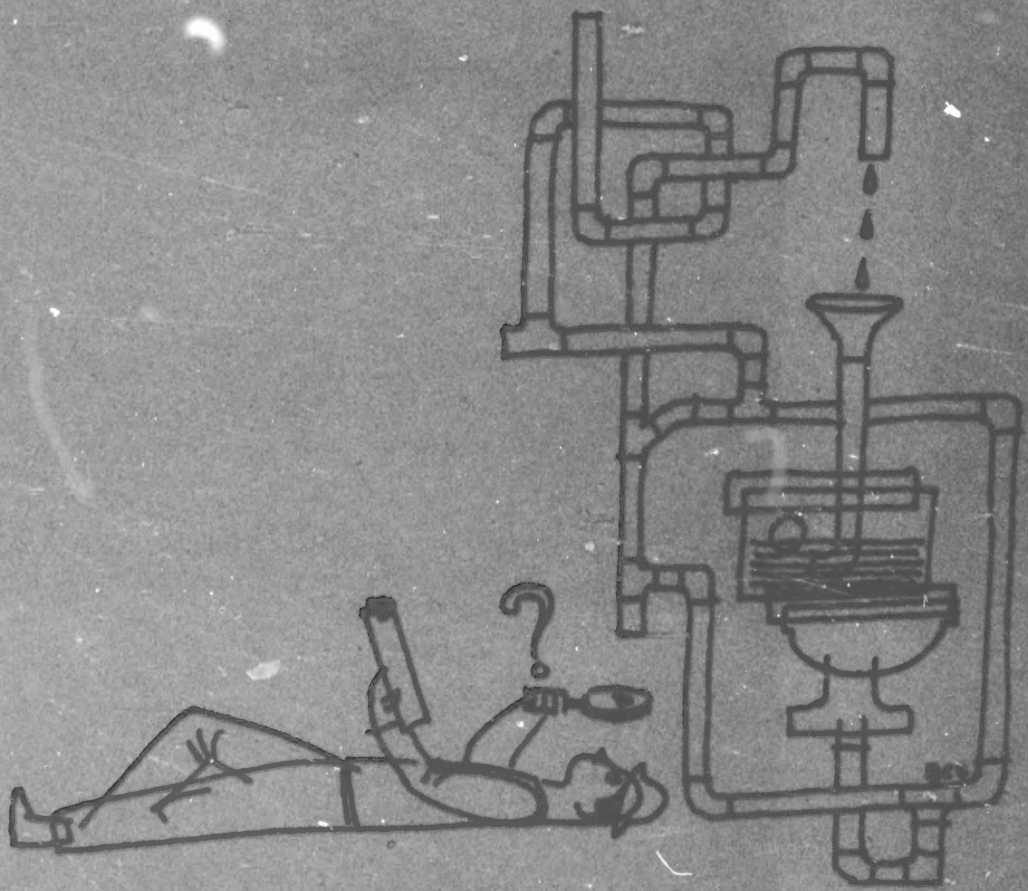
   Coordinator, Bennington County Regional Planning Commission, Arlington.

9. Addison County:

   Coordinator, Addison County Extension Service, East Middlebury Road, Middlebury.

Addendum II

Agency of Environmental Conservation



ADDENDUM II

AGENCY OF ENVIRONMENTAL CONSERVATION

State Agency

Environmental Protection Division

Agency of Environmental Conservation

Montpelier, Vermont

5-681 Plans and Specifications

PLANS AND SPECIFICATIONS FOR ALL NEW CONSTRUCTION, MAJOR ALTERATIONS OR ADDITIONS TO SCHOOL BUILDINGS, INCLUDING PLANS FOR PLUMBING, HEATING, LIGHTING, VENTILATION, WATER SUPPLIES, SANITATION AND SEWAGE WORKS SHALL BE CERTIFIED BY A REGISTERED ARCHITECT OR REGISTERED ENGINEER AND SUBMITTED FOR APPROVAL TO THE STATE AGENCY OF ENVIRONMENTAL CONSERVATION, AND MUST BE APPROVED BY THAT AGENCY BEFORE WORK IS BEGUN. A SET OF APPROVED PLANS SHALL BE KEPT AT THE CONSTRUCTION SITE DURING CONSTRUCTION. ANY CHANGES TO THE PLANS MUST BE APPROVED BY THE AGENCY OF ENVIRONMENTAL CONSERVATION, AND "AS-BUILT" PLANS SHALL BE PROVIDED THE SCHOOL BOARD PRIOR TO ACCEPTANCE OF THE COMPLETED WORK BY THE SCHOOL BOARD. (EC)

5-682 Site and Grounds

THE SITE OF ALL NEW BUILDINGS SHALL BE ADEQUATELY DRAINED AND GRADED. (EC)

5-683 School Structure

THE WALLS AND CEILINGS OF ALL NEW SCHOOL ROOMS SHALL HAVE AN EASILY CLEANABLE SURFACE. USEABLE FLOOR AREA IN CLASSROOMS SHALL BE AT LEAST THIRTY SQUARE FEET PER PUPIL, EXCEPT IN KINDERGARTEN ROOMS WHERE MINIMUM USEABLE FLOOR SPACE SHALL BE FIFTY SQUARE FEET PER PUPIL; THE FLOORS SHALL BE KEPT DRY. MINIMUM HEIGHT OF CEILINGS IN CLASSROOMS SHALL BE EIGHT FEET EXCEPT AS OTHERWISE REQUIRED BY THE STATE EDUCATION DEPARTMENT. (EC)

5-684 Lighting

THE ARTIFICIAL LIGHTING IN SCHOOL BUILDINGS SHALL PROVIDE AT LEAST 50 FOOT-CANDLES OF LIGHT, WITHOUT SIGNIFICANT GLARE, IN ALL OCCUPIED INSTRUCTIONAL AREAS. ALL OTHER OCCUPIED AREAS SHALL BE PROVIDED WITH AT LEAST 30 FOOT-CANDLES OF LIGHT. IT IS RECOMMENDED THAT LIGHTS IN HEALTH ROOMS INCLUDE CAPABILITY FOR DIMMING, AND THAT THE LIGHTING LEVELS RECOMMENDED BY THE AMERICAN SOCIETY OF ILLUMINATING ENGINEERS BE FOLLOWED IN DESIGNING LIGHTING SYSTEMS. (EC)

5-685 Basement

IF THE BUILDING HAS A BASEMENT, IT SHALL HAVE A SUITABLE FLOOR AND BE KEPT DRY; THE FOUNDATION WALL SHALL BE UNDER-DRAINED WHERE NECESSARY. (EC)

5-687 Toilets and Handwashing Facilities

A. TOILET FIXTURES. IN ALL NEW SCHOOLS WITH 200 OR MORE PUPILS THERE SHALL BE AT LEAST ONE TOILET FOR EACH 30 PUPILS; IN SCHOOLS WITH FEWER THAN 200 PUPILS THERE SHALL BE AT LEAST ONE TOILET FOR EACH 20 PUPILS. FOR BOYS, URINALS MAY BE SUBSTITUTED FOR UP TO 50% OF THE REQUIRED TOILETS IN EACH TOILET ROOM. PUBLIC TOILETS SHALL BE PROVIDED IF ANY PART OF THE SCHOOL IS TO BE USED BY THE PUBLIC.

B. HANDWASHING FACILITIES. EACH TOILET ROOM IN A NEW BUILDING SHALL BE PROVIDED WITH A WASH BASIN; THE MINIMUM RATIO SHALL BE ONE WASH BASIN FOR EACH TWO TOILET FIXTURES. HOT (MAXIMUM OF 120°F.) AND COLD WATER SHALL BE PROVIDED THROUGH A COMBINATION FAUCET, EXCEPT THAT INDIVIDUAL FAUCETS FOR HOT AND COLD WATER MAY BE USED WHEN ADEQUATE TEMPERATURE CONTROL OF HOT WATER IS ADMINISTERED TO PREVENT SCALDING. IT IS RECOMMENDED THAT HANDWASHING FACILITIES BE LOCATED SO THAT PUPILS PASS BY THEM ON LEAVING THE TOILET AND ON ENTERING THE CAFETERIA.

C. ALL TOILET ROOMS AND FIXTURES SHALL BE KEPT CLEAN AND SANITARY AT ALL TIMES. (EC)

5-688 Drinking Water

DRINKING FOUNTAINS WITH RUST-PROOF NOZZLES AND IMPERVIOUS GUARDS SHALL BE INSTALLED IN NEW SCHOOLS AT A RATIO OF ONE PER 75 PUPILS AND SHALL BE DESIGNED SO THAT THE WATER JET NEITHER TOUCHES THE GUARD NOR FALLS BACK ON THE POINT OF DISCHARGE. THE FOUNTAIN NOZZLE OPENING SHALL BE ABOVE THE LEVEL OF THE FOUNTAIN BOWL. THE BOWL SHALL BE OF IMPERVIOUS MATERIAL AND SO SHAPED AS TO BE EASILY KEPT CLEAN. ONLY WATER FROM A SOURCE APPROVED BY THE STATE DEPARTMENT OF HEALTH SHALL BE USED. (EC)

5-689 Heating and Ventilation

A. HEATING. THE HEATING SYSTEM IN ALL NEW BUILDINGS SHALL BE OF SUFFICIENT SIZE AND CAPABILITY TO WARM ALL ROOMS TO 70° F. IN ANY WEATHER. THE MINIMUM TEMPERATURE SHALL BE MAINTAINED AT 65° F. IN ALL OCCUPIED AREAS OF THE BUILDING, EXCEPT THAT CORRIDORS, HALLWAYS, STAIRWAYS, SHOP MAINTENANCE AND STORAGE AREAS MAY BE MAINTAINED AT 60° F.

B. VENTILATION.

1. EACH OCCUPIED CLASSROOM SHALL BE PROVIDED WITH VENTILATION OF NOT LESS THAN 4 CUBIC FEET OF FRESH OUTSIDE AIR PER MINUTE FOR EACH OCCUPANT WITH AN EQUAL VOLUME OF AIR EXHAUSTED THROUGH OPENINGS IN EACH CLASSROOM. IT IS RECOMMENDED THAT ADDITIONAL VENTILATION BE AVAILABLE TO REDUCE ODORS AND AVOID OVERHEATING.

2. EACH OCCUPIED GYMNASIUM, LOCKER ROOM, AUDITORIUM AND CAFETERIA IN NEW BUILDINGS SHALL BE PROVIDED WITH AT LEAST 4 AIR CHANGES PER HOUR, AT LEAST 10% OF WHICH SHALL BE FRESH OUTSIDE AIR. DURING HOURS OF USE, KITCHENS SHALL BE PROVIDED WITH AT LEAST 8 AIR CHANGES PER HOUR. REMOVABLE GREASE FILTERS SHALL BE INSTALLED IN HOODS AND MECHANICAL EXHAUST SYSTEMS. DURING SCHOOL HOURS, TOILET ROOMS SHALL BE PROVIDED

WITH VENTILATION OF AT LEAST 15 CUBIC FEET PER MINUTE FOR EACH TOILET FIXTURE.

3. ELECTRIC WELDING, SPRAY PAINT AND DUST AREAS, INTERNAL COMBUSTION ENGINES AND AREAS WHERE SMOKING IS PERMITTED SHALL BE EXHAUSTED TO THE OUTDOORS, WITH APPROPRIATE AIR POLLUTION CONTROL EQUIPMENT WHERE REQUIRED BY CHAPTER 5 OF THE AIR POLLUTION CONTROL REGULATIONS OF THE AGENCY OF ENVIRONMENTAL CONSERVATION.

4. EXHAUST VENTILATION DUCTS FOR CLASSROOMS, AUDITORIUMS, GYMNASIUMS, SHOPS AND OTHER ROOMS USED BY PUPILS FOR SCHOOL ACTIVITIES SHALL BE SEPARATE FROM TOILET ROOM EXHAUST VENTILATION DUCTS WITHIN THE BUILDING. EXHAUST VENTILATION FOR TOILET ROOMS, SHOWER ROOMS AND LOCKER ROOMS MAY BE COMBINED. (EC)

5-690 Schoolhouse Maintenance Sanitation

THE SCHOOL FACILITIES AND GROUNDS SHALL BE KEPT CLEAN AND FREE OF LITTER. NO PUBLIC HEALTH HAZARD SHALL BE PERMITTED TO EXIST ON THE PREMISES. (EC)

5-691 Plumbing

ALL PLUMBING SHALL CONFORM TO CHAPTER 5, SUBCHAPTER 3 OF THE HEALTH REGULATIONS, TITLED PUBLIC BUILDING REGULATIONS. ALL EXPOSED PLUMBING SHALL BE OF APPROVED METAL PIPE. (EC)

5-692 Food Service

ALL FOOD SERVICE AND FOOD PREPARATION IN SCHOOLS SHALL COMPLY WITH CHAPTER 5, SUBCHAPTER 2, ARTICLES 1 AND 2 OF THE VERMONT HEALTH REGULATIONS. (EC)

AMENDED EFFECTIVE JUNE 23, 1974

Addendum III
Electricians' Licensing Board – Rules

ADDENDUM III

ELECTRICIANS' LICENSING BOARD - RULES

State Agency

Department of Labor and Industry

Montpelier, Vermont

Rule 1: Description of Organization

(1) The Vermont Electricians' Licensing Board, hereinafter referred to as the Board, consists of 5 members. The Board Office is located at State Department of Labor and Industry, State Office Building, Montpelier, Vermont.

(2) The Board has full power to control the issuance and revocation of electricians' licenses. In order to exercise its powers and carry out its responsibilities it may perform the following functions:

(a) Conduct examinations to test the competency of applicants for licenses.

(b) Conduct hearings with regard to the administration of its affairs, issue subpoenas for witnesses and take the testimony of witnesses in person before the Board or by deposition.

(c) Investigate all matters within its jurisdiction.

(d) Make rules and regulations consistent with its statutory authority.

(3) The public may obtain information and make submissions or requests at the Board's office.

Rule 2: Adoption of the National Electrical Code of 1971

By authority of 26 V.S.A. §891, the Board adopts the provi-

sions of the National Electrical Code of 1971 as part of its rules insofar as it applies to "complex structures", as defined in 26 V.S.A. §881 (3).

Rules 3: Approval of Plans and Specifications

(Not adopted - Under study)

Rule 4: Examinations

(1) No person will be eligible to take an examination without first submitting a current application.

(2) When an application for a license is approved by the Board, the applicant must take and pass an examination designed to test his competence.

(3) Persons eligible to take the examination will be notified as to when and where to appear for the examination.

(4) Dates and locations for holding examinations will be designated by the Board. Examinations for all licenses may be scheduled for the same day.

(5) If an applicant is unable to appear for the examination, he shall notify the Board's office at least 24 hours prior to the examination. Failure to appear without such notice shall constitute forfeiture of all fees and application.

Rule 5: Renewal of License

(1) A notice of renewal and application for renewal of license will be sent to each licensee by the Board prior to the expiration of his license. The application for renewal of license and the appropriate fee must be received by the Board prior to the date the license expires.

(2) If a license is allowed to lapse it can be renewed

within one (1) year of its expiration date by the payment of $10.00 in addition to the renewal fee.

(3) If a license is not renewed within one (1) year of its expiration date the inactive licensee must make application for a new license and must take the appropriate examination.

Rule 6: MEMBER OF ARMED FORCES; RENEWAL OF LICENSE

An active licensee may renew his license within one year upon separation from the United States Armed Forces, by paying the renewal fee, provided he was in good standing upon entry into the Armed Forces.

Rules 8: Complaints

Any person desiring to file a complaint with the Board shall do so in writing, setting forth a full statement of the facts concerning the alleged infraction of the electricians' licensing law or rules.

In the event a complaint is filed with the Board, the scope of the investigation to be made shall not be limited to the matter set forth in the request for investigation but shall extend to any act or acts coming to the attention of the Board which appear to violate the statutes or these rules.

Rule 9: Petition for Rule-Making and Declaratory Rulings

(1) Petitions for the adoption, amendment, or repeal of any of these rules may be filed at the Board's office. Such petitions must be in writing in business letter form or in the form of petition and will initiate the necessary rule making procedure.

(2) Petitions for declaratory rulings as to the applicability of any statutory provision or any rule or order of the Board may be filed at the Board's office. Such petitions will be considered and disposed of promptly.

Rule 10: Forms

All forms which are required by the Board will be available on request at the Board's office.

Rule 11: Enlargement of Rules

The Board may take a proceeding partially or entirely out of these rules when the law so permits and when, in their opinion, the interest of the public so requires.

Rules 12: Certificate of Approval - Fee Schedule

In accordance with 26 V.S.A. §893(a) the following schedule of fees is established to be paid to the Commissioner of Labor and Industry, to defray costs of inspection:

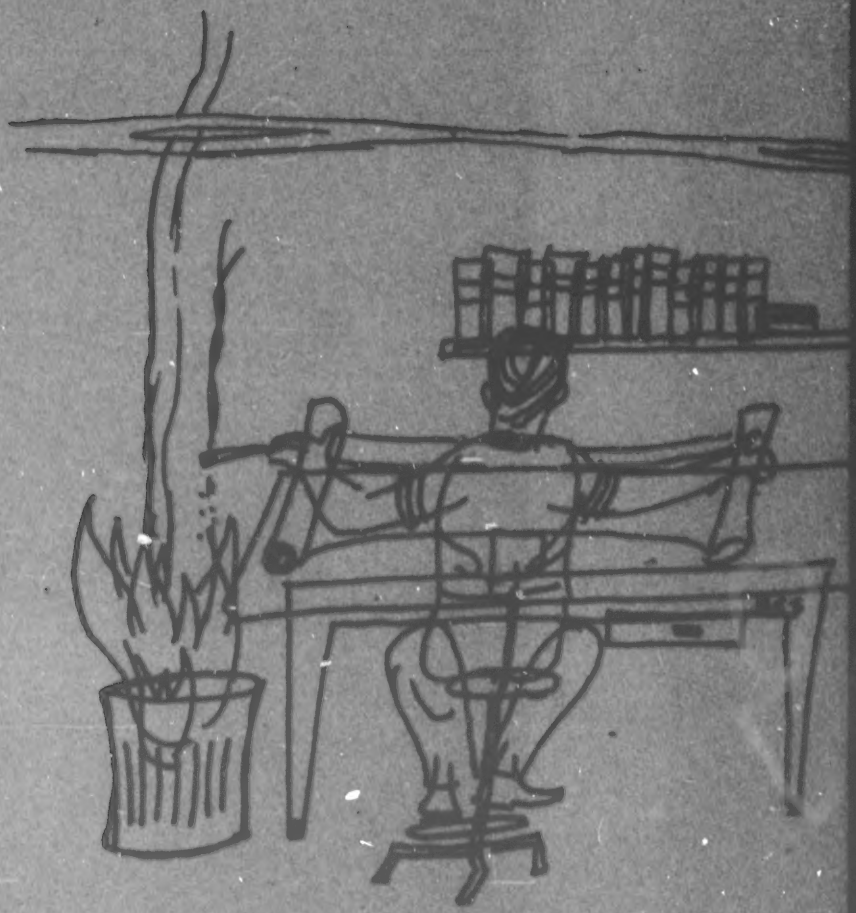
Service for Commercial Buildings	$10.00
For 240 Volt Single Phase or Three Phase	10.00
For 480 Volt Three Phase	18.00
Hot Water Heater, Domestic	1.50
Oil Burner Boiler and Furnaces	2.50
Circulating Pumps	2.50
Driers	2.00
Disposal Units	1.50
Each Additional Transformer	1.50
Gasoline Pump, each	3.50
Transformers, each	10.00
Motors (1 to 15 H.P.)	1.50 each H.P.
Motors over 15 H.P.	35.00
Multiple Dwellings, First Unit	12.50
Each Additional Unit	7.50

Electric Heat Per Room or Heated Area		2.50
Complete Building - to 100 outlets		25.00
	101 - 200 outlets	40.00
	200 - 500 outlets	60.00
	over 500 outlets	75.00 plus $5.00 for each additional inspection

Upon approval of building and payment of the above fees, a certificate of approval shall be granted.

The foregoing rules were adopted and became effective December 19, 1970.

Addendum IV
Department of Public Safety



ADDENDUM IV

DEPARTMENT OF PUBLIC SAFETY

State Agency:

Department of Public Safety

Fire Marshal's Office

Montpelier, Vermont

The need of exercising special precaution to safeguard the lives of school children is widely recognized. Some serious losses of life have resulted from fires in schools, and very promptly such experiences always stir public opinion and cause a steady trend toward safer school construction. The loss of life in school fires has been higher than would be expected in a daytime occupancy. Even where loss of life is avoided, the social and economic loss that results from a fire in a school building is a consideration of importance.

One of the important factors of fire safety in buildings is the noncombustibility of the construction itself. The use of noncombustible members in the structural frame, roof, floors, walls, and partitions eliminates a major part of the fuel in a structure and affords a high degree of fire safety. Such construction also eliminates the possible disastrous spread of flame and fire over combustible surfaces and within concealed spaces and contributes materially to saving in heating costs and maintenance of the school plant.

In order to answer the needs of the public, the Department of Public Safety has promulgated rules and regulations relating to fire prevention and public safety from fire or panic in the

construction, location, use, operation and maintenance of all public buildings. Drawings and specifications for all new construction or major alteration of public buildings must be submitted to the Department prior to construction or alteration and the Department should be consulted during the planning stage for any clarification of its requirements.

The requirements for Education occupancies, as published by the Department of Public Safety, are contained in the Fire Prevention Code of the State of Vermont 1972 Edition.

In addition to the above, the Department of Education requires that in no case shall the live load for the roof be less than fifty (50) pounds per square foot. The Department of Labor and Industry requires that the electrical service and wiring throughout the building shall comply with the National Electrical Code.

APPENDIX A

STUDENT AND COMMUNITY INVOLVEMENT

POLICY

Adopted by the State Board of Education June 16, 1970

WHEREAS, THE STATE BOARD OF EDUCATION SUPPORTS CREATIVE LOCALISM AND

WHEREAS, ACTIVITIES IN WHICH VERMONT STUDENTS, PARENTS AND CITIZENS ARE COOPERATIVELY ENGAGED, WILL MORE PRECISELY REFLECT THE AMBITIONS, HOPES, ASPIRATIONS AND THE DREAMS OF LOCAL CITIZENS THEREBY PRODUCING GREATER COMMUNITY PRIDE AND

WHEREAS, TOTAL INVOLVEMENT OF YOUTH AND ADULTS FOR BOTH PLANNING AND IMPLEMENTING PROGRAMS SHOULD PRODUCE GREATER PRUDENCE AND PRIDE IN THE FINAL PRODUCT,

BE IT THEREFORE RESOLVED, THAT THE STATE BOARD OF EDUCATION SUPPORTS AND ENCOURAGES LOCAL SCHOOL ADMINISTRATORS AND SCHOOL BOARDS TO INVOLVE AND UTILIZE BOTH COMMUNITY AND STUDENT ACTION WHEN IMPROVEMENTS ARE TO BE MADE TO NEW OR EXISTING SCHOOL FACILITIES AND SITES FOR WHICH SCHOOL CONSTRUCTION AID IS TO BE APPLIED, AND

BE IT FURTHER RESOLVED, THAT STUDENT INVOLVEMENT ON SUCH IMPROVEMENTS BE INCORPORATED AS A PART OF THE TOTAL EDUCATIONAL PROGRAM OF THE DISTRICT SUBJECT TO ALL EXISTING BENEFITS WITHIN THE SCHOOL BUILDING AID PROGRAM OF TITLE 16, V.S.A., §3448, AS AMENDED.

PRE-ENGINEERED BUILDINGS - ARCHITECT

POLICY

Adopted by the State Board of Education September 18, 1967

1. A SCHOOL DISTRICT CONTEMPLATING A BUILDING PROGRAM USING A PRE-ENGINEERED TYPE BUILDING CAPABLE OF DISASSEMBLY AND RELOCATION TO A DIFFERENT SITE MUST RETAIN AN ARCHITECT REGISTERED IN THE STATE OF VERMONT TO ADVISE THE DISTRICT WITH RESPECT TO SUCH BUILDING PROGRAM. COMPETITIVE BIDS SHALL BE REQUIRED UNLESS WAIVED BY THE BOARD FOR GOOD CAUSE SHOWN. THE ARCHITECT SHALL NOT BE IN THE EMPLOY OF A CONTRACTOR BIDDING ON, OR CONSTRUCTING SUCH PRE-ENGINEERED BUILDING.

2. A BUILDING PROJECT CONTEMPLATING THE USE OF SUCH PRE-ENGINEERED BUILDINGS, WHEN SUBMITTED TO THE BOARD FOR PRELIMINARY APPROVAL, MUST BE ACCOMPANIED BY A WRITTEN REPORT OF AN ARCHITECT INDICATING THAT THE PROPOSED BUILDING IS OF A TYPE, KIND, QUALITY, SIZE AND ESTIMATED COST SUITABLE FOR THE PROPOSED CURRICULUM, TOGETHER WITH HIS REASONS THEREFOR. THE ARCHITECT SHALL BE AVAILABLE FOR QUESTIONING IF REQUESTED BY THE BOARD.

3. THE FINAL AWARD ON SUCH PRE-ENGINEERED BUILDINGS SHALL NOT BE MADE UNTIL THE ARCHITECT SUBMITS A REPORT STATING THAT THE COMPLETED BUILDING CONFORMS TO THE PLANS APPROVED BY THE BOARD.

4. IN THE EVENT THE STATE BOARD OF EDUCATION FINDS THAT A PROPOSED BUILDING PROJECT IS OF A TEMPORARY NATURE AND IS OTHERWISE SUITABLE, THE SCHOOL DISTRICT MAY NOT RECEIVE STATE AID THEREFOR UNLESS IT GIVES ASSURANCE THAT THE BUILDING WILL BE USED THROUGHOUT ITS USEFUL LIFE FOR EDUCATIONAL PURPOSES ONLY.

AID FOR "OPEN" SCHOOL FACILITIES

POLICY

Adopted by the State Board of Education February 24, 1970

THAT THE STATE BOARD OF EDUCATION VOTE TO ESTABLISH A POLICY OF PAYING 30% CONSTRUCTION AID UNDER SECTION 3448, TITLE 16, V.S.A., ON ITEMS WHICH SERVE AS BARRIERS, REPLACING THE TRADITIONAL FIXED INTERIOR PARTITIONS, IN SCHOOLS DESIGNED WITH FLEXIBILITY AND LARGE OPEN SPACES. THESE ITEMS TO BE CHALKBOARD, TACKBOARD, BOOKCASES, OR ANY OTHER ITEMS WHICH WILL SERVE THIS PURPOSE AS DETERMINED BY THE DIRECTOR OF ADMINISTRATIVE SERVICES.

PHYSICALLY HANDICAPPED

POLICY

Adopted by the State Board of Education November 17, 1970

1. EACH CHILD IS AN INDIVIDUAL AND MUST BE ACCEPTED AS A PERSON, AND NO DISTINCTION SHOULD BE MADE BETWEEN THE FORTUNATE AND THE LESS FORTUNATE.

TOILETS FOR THE PHYSICALLY HANDICAPPED MUST BE AVAILABLE IN:

a) NEW SCHOOL CONSTRUCTION, AND

b) RELOCATABLE UNITS WHICH ARE NOT PHYSICALLY CONNECTED TO AN EXISTING STRUCTURE.

c) EITHER THE RELOCATABLE UNITS PURCHASED WHICH ARE CONNECTED TO AN EXISTING STRUCTURE; OR, THE SCHOOL DISTRICT BE GIVEN THE OPTION OF PROVIDING TOILET FACILITIES FOR THE PHYSICALLY HANDICAPPED IN THE EXISTING STRUCTURE, WHICHEVER WILL BEST SERVE THE INTERESTS OF THE STUDENT AT THAT FACILITY.

d) PRE-EXISTING FACILITIES PURCHASED BY A SCHOOL DISTRICT.

2. IN RESPECT TO MULTI-STORY PRE-EXISTING BUILDINGS, PROVISIONS MUST BE MADE FOR:

a) AN ELEVATOR FOR PARAPLEGICS BEFORE CONSTRUCTION AID IS GRANTED; OR

b) ASSURANCE BY THE SCHOOL DISTRICT IN WRITING THAT IF A PARAPLEGIC IS IN ATTENDANCE, THE PROGRAM WILL BE SO CONSTRUCTED AS NOT TO DISCRIMINATE AGAINST THAT INDIVIDUAL AND THAT THE SAME OPPORTUNITIES AVAILABLE TO OTHER CHILDREN WILL BE AVAILABLE TO THAT INDIVIDUAL WITHIN HIS CAPABILITIES.

APPENDIX B

7/23/70
LI 1 SAS
Revised:
2/1/71

TO: Department of Education
School Administrative Services
State Office Building
Montpelier, Vermont 05602

DATE: _____

NOTICE OF INTENT
TO APPLY FOR STATE SCHOOL CONSTRUCTION AID

School District _____

Superintendent _____

The school directors of this district have determined that a need exists to undertake planning associated with new school construction or major addition to existing school buildings. The anticipated construction would serve pupils in grades _____ to _____ and would be required to have a maximum pupil capacity of _____, at an estimated cost of $_____.

Notice is hereby given of the intention of the school directors to make eventual application for all state financial assistance available to a project of this type. The directors expect to request approval of a building program by the voters of the district on or about the following date: _____.

The directors hereby request an appointment with a representative of the Division of School Administrative Services to review requirements to be met in the planning of this project.

_____
Clerk of the School Board

_____
Superintendent of Schools

APPENDIX C

STATE OF VERMONT PROJECT NO. S-_____

DEPARTMENT OF EDUCATION _____ School District

APPLICATION FOR SCHOOL BUILDING AID

V.S.A., Title 16, Section 3448, as amended

APPLICATION IS HEREBY MADE FOR STATE ASSISTANCE FOR THE PROJECT DESCRIBED BELOW:

Name and location of construction project _____

ESTIMATED COST FIGURES:

Gereral Construction $_____

Special Education _____

Area Vocational _____

TOTAL ESTIMATED COST: $_____

FUNDS OR BOND ISSUE VOTED $_____ DATE _____

SQUARE FOOT AREA OF THIS PROJECT _____ square feet

USABLE NUMBER ACRES IN SITE _____ NO. TEACHERS _____

GRADES TO BE HOUSED _____ CLASSES TO START ____/____
Month Year

ANTICIPATED ENROLLMENT _____ CAPACITY OF PROJECT _____

ARCHITECT AND ADDRESS _____

PROJECT DETAILS

TYPE OF PROJECT:

_____ NEW CONSTRUCTION

_____ MAJOR ADDITION

_____ RENOVATIONS OR ALTERATIONS

_____ SITE DEVELOPMENT

_____ COMPLIANCE WITH FIRE MARSHAL'S ORDERS

_____ OTHER

DESCRIBE PROJECT: _____

_____

_____

_____

SCHOOL BUILDING FACILITIES

GENERAL PURPOSE CLASSROOMS

____fixed partitioning

____operable partitioning

____open plan

SPECIAL PURPOSE CLASSROOMS

____art

____business education

____home economics

____industrial education

____instrumental and choral music

____kindergarten

____language laboratory

____science

____special education

____other (specify)_____

LIBRARY (Total area)_____

____reading rooms

____audio visual area

____storage

____work rooms

____other (specify)_____

AUDITORIUM (Seating Capacity)_____

GYMNASIUM (Total area) _____

____playing areas

____special exercise rooms

____locker rooms

____shower rooms

____equipment rooms

____other (specify)_____

SERVICE FACILITIES

____administrative rooms

____custodial rooms

____dining rooms (seating cap)_____

____faculty work rooms

____health rooms

____kitchen - Serving capacity,

____meals per day

____storage rooms (Tot. area)_____

____student activity rooms

____toilet rooms

DESCRIBE PROVISIONS FOR:

_____
Audio-Visual education

_____
Multi-purpose rooms

_____
Physically Handicapped

_____
Community Use of Building

EXHIBITS REQUIRED:

A_1 - Educational specifications for project. (Where applicable)

A_2 - Proposed Curriculum. (Where applicable)

B - Certified copy of resolution of legislative branch of school district stating that the public interest or necessity demands the school building improvements applied for as required by Title 24, Section 1754 and 1755, V.S.A.

C - Certified copy of warning voted upon by the school district and the recorded vote.

D - Agreement by school district to refund to the State thirty percent of the sale price or actual grant, whichever is less, of any item or building for which 30% aid was awarded.

E - Agreement to provide high school instruction from a prescribed area. (Where applicable)

F - Statement of approval of project by District Environmental Control Commission. (Where applicable)

G - Statement of qualifications of person who will supervise actual construction.

H - Statement of bidding procedures to be followed.

I - Statement of approval of access roads by the Department of Highways. (Where applicable)

J - Detailed blueprints of the proposed construction project.

K - Statement of approval of the plans by the Agency of Environmental Conservation. (Health and Water Resources)

L - Statement of approval of the plans by the Department of Public Safety.

Signed _____
Chairman

_____

_____

_____

_____

_____

_____
Board of School Directors

DATE _____

_____
Superintendent of Schools

SUPPLEMENT TO APPLICATION FOR SCHOOL BUILDING AID

CLASSROOM CONSTRUCTION FOR HANDICAPPED CHILDREN
Title 16, V.S.A., Section 3457a

(a) To provide classroom space for instruction for handicapped pupils under Sections 2941-2944 of Title 16, a union school district, town school district, incorporated district, or districts in joint contract or supervisory unions in joint contract when designated by the commissioner of education shall be eligible to receive state aid for construction, alteration or addition of classroom space from funds appropriated under sections 3447-3456 of Title 16.

(b) When the state board of education finds evidence of need for construction of those classrooms and the project meets criteria established by the board as to type, kind, quality, size, use, location, and estimated cost suitable for the proposed curriculum and will effectively serve the largest number of handicapped pupils in an area specified by the state board of education, it may award 75 per cent of the cost of that construction, alteration, or addition.

(c) If at any time the need to use those classrooms for special education ceases, permission may be given by the state board of education for such other use as the school board finds desirable.

_____ School District

NUMBER OF SPECIAL EDUCATION CLASSROOMS: _____

SQUARE FOOT AREA OF CLASSROOMS ONLY: _____

ESTIMATED COST OF SPECIAL EDUCATION CLASSROOMS: $_____

EXHIBITS:
A. Resolution of the School Board authorizing the Superintendent of Schools to apply for 75% school building aid in accordance with Section 3457a(b) to serve the special education needs. (Give details of these needs.)

B. Certificate by Director of Special Educational and Pupil Personnel Services certifying that this construction is necessary to meet these needs.

C. Letter from Architect giving number and size of special education classrooms and estimated cost.

D. Agreement to provide special education to handicapped pupils in an area specified by the State Board of Education.

Signed _____
Chairman

_____

_____

_____

_____

_____

_____
Board of School Directors

_____
Date

APPENDIX D

STATE OF VERMONT PROJECT NO. S-_____

DEPARTMENT OF EDUCATION _____ School District

APPLICATION FOR SCHOOL BUILDING AID
V.S.A., Title 16, Section 3448, as amended

APPLICATION IS HEREBY MADE FOR STATE ASSISTANCE FOR THE PROJECT DESCRIBED BELOW:

ACQUISITION OF RELOCATABLE UNITS

NUMBER OF UNITS TO BE ACQUIRED _____ CONDITION _____ New _____ Used

SIZE OF UNITS TO BE ACQUIRED _____ CONSTRUCTION _____ Wood _____ Steel

WHERE WILL UNITS BE LOCATED IN DISTRICT _____

ESTIMATED COST PER UNIT $_____ TOTAL EST. COST $_____

FUNDS VOTED BY DISTRICT $_____ DATE OF VOTE _____

GRADES TO BE SERVED _____ TOTAL USABLE SQUARE FOOTAGE (At least 30 sq.ft. per pupil) _____

OUTLINE BIDDING PROCEDURES TO BE USED: _____
(Attach list of companies that submitted bids) _____

ACQUISITION OF PRE-EXISTING BUILDINGS OR SCHOOL FACILITIES

BUILDING COST EXCLUSIVE OF SITE $_____

TYPE OF CONSTRUCTION _____ Wood _____ Steel _____ Other _____ Single Story _____ Multi-Story

BUILDING DIMENSIONS _____ NUMBER OF ROOMS _____

GRADES TO BE HOUSED _____ BUILDING CONSTRUCTED IN _____ Year

PLANNED USE OF THIS BUILDING _____

_____

_____

_____

BUILDING TO BE PURCHASED FROM _____
School District or Individual and address

EXHIBITS REQUIRED:

A - Certified copy of resolution of legislative branch of school district stating that the public interest or necessity demands the purchases applied for as required by Title 24, Section 1754 and 1755, V.S.A.

B - Certified copy of warning voted upon by the district and the recorded vote.

C - Detailed description of building purchased or complete detailed plans and specifications for relocatable units.

D - Statement of approval of buildings or units by Agency of Environmental Conservation.

E - Statement of approval of buildings or units by Department of Public Safety.

F - Statement of assessment of building to be acquired. (At least two.) Statement of assessment of site, separate from building.

G - Statement of agreement by the school district to refund to the state thirty (30) percent of the sale price, or original grant, whichever is less, of any item, building, or relocatable unit for which 30% aid was awarded.

Signed _____
Chairman

_____

_____

_____

_____

_____

_____
Board of School Directors

DATE _____

_____
Superintendent of Schools

APPENDIX E

PROGRAM REQUIREMENTS

SCHOOL SITE DEVELOPMENT

PLANNED USAGE AND MAXIMUM PARTICIPATION EXPECTED	SIZE OF AREA NEEDED	PLANNED LOCATION ON-SITE OR OTHER
DIRECT STUDY ACTIVITIES		
Life Sciences and Ecology		
land plants and animals ____pupils		
aquatic plants and animals ____pupils		
effects of oxygen cycle, nitrogen cycle, etc. ____pupils		
community health issues- air pollution, water pollution, soil pollution, waste disposal ____pupils		
other-		
Earth Sciences		
geological formations ____pupils		
wind erosion ____pupils		
water erosion ____pupils		
soil development ____pupils		
mineral deposits ____pupils		
other-		
Conservation		
flood & erosion control ____pupils		
wildlife conservation ____pupils		
natural beauty ____pupils		
other-		

PROGRAM REQUIREMENTS

SCHOOL SITE DEVELOPMENT

PLANNED USAGE AND MAXIMUM PARTICIPATION EXPECTED	SIZE OF AREA NEEDED	PLANNED LOCATION ON-SITE OR OTHER
FIELD EXPERIENCE		
Agriculture		
gardening ____pupils		
animal husbandry ____pupils		
forest management ____pupils		
horticulture & landscaping ____pupils		
nursery management ____pupils		
other-		
Industrial Arts		
house building ____pupils		
bridge building ____pupils		
other-		
Mathematics		
land measurement ____pupils		
contour mapping ____pupils		
other-		
Graphic Arts		
nature subjects ____pupils		
natural lighting uses ____pupils		
other-		
Safety Education		
driver training ____pupils		
campfire safety ____pupils		

PROGRAM REQUIREMENTS

SCHOOL SITE DEVELOPMENT

PLANNED USAGE AND MAXIMUM PARTICIPATION EXPECTED	SIZE OF AREA NEEDED	PLANNED LOCATION ON-SITE OR OTHER
survival training		
water safety ____pupils		
edible wildlife ____pupils		
fire fighting ____pupils		
other-		
PHYSICAL EDUCATION		
Low order games (elementary grades)		
running games		
ball handling games		
roller skating		
other-		
Total number of pupils_____		
Field Games		
softball		
soccer		
field hockey		
track & field activities		
archery		
lacrosse		
touch football		
other-		
Total number of pupils_____		

PROGRAM REQUIREMENTS

SCHOOL SITE DEVELOPMENT

PLANNED USAGE AND MAXIMUM PARTICIPATION EXPECTED	SIZE OF AREA NEEDED	PLANNED LOCATION ON-SITE OR OTHER
Court games		
volleyball		
tennis		
handball		
basketball		
other-		
Total number of pupils_____		
ATHLETICS (interscholastic & intramural)		
baseball		
softball		
soccer		
football, 6-man and 11-man		
tennis		
golf		
field hockey		
ice hockey		
skiing		
track & field		
lacrosse		
other-		
Total number of pupils_____		

PROGRAM REQUIREMENTS

SCHOOL SITE DEVELOPMENT

PLANNED USAGE AND MAXIMUM PARTICIPATION EXPECTED	SIZE OF AREA NEEDED	PLANNED LOCATION ON-SITE OR OTHER
BUILDING AND SERVICE FACILITIES		
Initial construction ____pupils		
Maximum expansion ____pupils		
Traffic space		
sidewalks		
roadways		
bus loading		
freight delivery		
fuel delivery		
Parking		
staff		
visitors		
student body		
community functions ___vehicles		
Auxiliary buildings		
garages		
pump houses		
storage sheds		
athletic equipment		
groundskeeping equipment		
general supplies		
Sewage disposal		
sewer lines		
treatment plant		
septic tanks		
leaching fields		
filter beds		
pumping stations		
Utility service		
transformer pads		
power lines		
gas, water, telephone lines		
Other-		

PROGRAM REQUIREMENTS

SCHOOL SITE DEVELOPMENT

PLANNED USAGE AND MAXIMUM PARTICIPATION EXPECTED	SIZE OF AREA NEEDED	PLANNED LOCATION ON-SITE OR OTHER
LANDSCAPING		
Lawns		
Drainage provisions		
Development of esthetic features		
Other-		
RECREATION (school and community)		
Scenic walkways		
Tennis		
Volleyball		
Handball		
Handicrafts		
Swimming		
Drama-outdoor theatre		
Music-outdoor band, orchestra and chorus programs		
Roller skating		
Bench sitting		
Boccie		
Bowling		
Jarts		
Picnicking		
Scouting activities		
Little League		
Football		

PROGRAM REQUIREMENTS

SCHOOL SITE DEVELOPMENT

PLANNED USAGE AND MAXIMUM PARTICIPATION EXPECTED	SIZE OF AREA NEEDED	PLANNED LOCATION ON-SITE OR OTHER
Baseball		
Softball		
Horseshoes		
Shuffle board		
Fishing		
Hockey		
Day camp		
Track		
Dancing		
Equipped playgrounds swings climbing apparatus construction areas		
Pre-school playgrounds sandpiles see-saws tables benches wading pool open space		
Other-		
BUFFER SPACES Treed or open space to isolate noisy out-of-door activities from academic and quiet areas.		

Off-site locations subject to approval by Department of Education if offered as part of minimum acreage requirements.

TABLE I - AREAS FOR COMMON GAMES

Name	Dimensions of Game Areas (In Feet)	Use Dimensions (In Feet)	Space Required (Sq.Ft.)
Archery.....	90 - 300 in length Targets 15' apart	50 x 175 (min.) 50 x 400 (max.)	8,750 20,000
Badminton.....	17 x 44 (singles) 20 x 44 (doubles)	25 x 60 30 x 60	1,500 1,800
Baseball.....	90' diamond	350 x 350 (average with hooded backstop) 400 x 400 (without)	122,500 160,000
Basketball (men).....	50 x 94 (max.) 42 x 74 (min.)	60 x 100 (average)	6,000
Basketball (women)...	45 x 90	55 x 100	5,500
Bowling (alley).....	3 1/2 x 62	10 x 100	1,000
Croquet (modern).....	41 x 85	50 x 95	4,750
Deck Tennis.....	12 x 40 (singles) 18 x 40 (doubles)	20 x 50 26 x 50	1,000 1,300
Field Hockey.....	150 x 270 (min.) 180 x 300 (max.)	210 x 330 (average)	69,300
Football.....	160 x 360	190 x 420	79,800
Handball.....	20 x 34	30 x 45	1,350
Hand Tennis.....	16 x 40	25 x 60	1,500
Horseshoes (men).....	Stakes 40' apart	12 x 52 (or more)	624
Horseshoes (women)...	Stakes 30' apart	12 x 42 (or more)	504
Ice Hockey.....	60 x 165 (min.) 110 x 250 (max.) 85 x 200 (recommended)	100 x 220 (average)	22,000
Lacrosse (men).....	180 x 330 (min.) 210 x 330 (max.)	225 x 360 (average)	81,000
Lacrosse (women).....	Goals 270 x 350' apart No definite boundaries	240 x 360 (average)	86,400
Paddle Tennis.....	16 x 44 (singles) 20 x 44 (doubles)	30 x 70 35 x 70	2,100 2,450
Quoits.....	Stakes 30' apart Stakes 54' apart	12 x 44 25 x 80	528 2,000
Shuffleboard.....	6 x 52	10 x 60	600
Six-Man Football.....	120 x 300	180 x 360	64,800

Name	Dimensions of Game Areas (In Feet)	Use Dimensions (In Feet)	Space Required (Sq. Ft.)
Soccer (men).....	165 x 300 (min.) 225 x 360 (max.)	225 x 360 (average)	81,000
Soccer (women).....	120 x 240 (min.) 180 x 300 (max.)	200 x 320 (average)	64,000
Softball (men).....	60' diamond	275 x 275 (min.)	75,625
Softball (women)....	60' diamond	250 x 250 (min.)	62,500
Speedball (men).....	160 x 360	200 x 420	84,000
Speedball (women)...	180 x 300	220 x 350	77,000
Table Tennis.....	5 x 9	12 x 20	240
Tennis.....	27 x 78 (singles) 36 x 78 (doubles)	50 x 120 60 x 120	6,000 7,200
Touch Football.....	160 x 360	190 x 420	79,800
Volley Ball	30 x 60	45 x 80	3,600

Miscellaneous	Elementary	Secondary	
"Park"	35,000	80,000	Picnic areas with fireplace, benches, tables, walks, parking, etc.
Driving range		150,000	Driver Education Program
Garden	2,000	4,000	Service related plus children's flower gardens or vegetable gardens.
Older Adults	4,000	4,000	Lounging, general sociability, benches, tables
Water Play	2,000	4,000	Wading pool, spray pool, etc.
Quiet Activities	5,000	5,000	Dramatics, handicraft, music, quiet games, etc.

Division of Environmental Protection
Agency of Environmental Conservation
Montpelier, Vermont

GUIDELINES FOR THE INVESTIGATION OF POTENTIAL SCHOOLHOUSE SITES REGARDING (1) WATER SUPPLY AND (2) SEWERAGE AND SEWAGE TREATMENT FACILITIES

When local school boards and/or private school officials inspect potential building sites for the proposed construction of elementary school level, middle school level, or high school level schoolhouses, the question of providing adequate sewerage or sewage treatment facilities and adequate water supply facilities should be basic considerations in the determination of a suitable site.

SEWERAGE AND SEWAGE TREATMENT

1. For any particular site, it should not be assumed that connection to an existing or proposed public sewerage system will automatically be authorized. Contact should be made with local public works officials and the Department of Water Resources (Mr. William Albert, Director of the Water Supply and Pollution Control Division) to determine whether it is likely the proposed sewage connection will obtain conceptual or preliminary approval.

2. For those sites where a public system does not exist or where connection to an existing system will not obtain approval, on-site disposal of the sewage will then be necessary PROVIDING SAID SITE HAS BEEN INVESTIGATED AND FOUND SUITABLE FOR THIS PURPOSE.

3. The suitability of a particular site to accommodate on-site sewage disposal for the proposed sewage loadings can only be determined by a PRELIMINARY SITE AND SOILS INVESTIGATION. Such an investigation shall be conducted by a qualified Professional Engineer, registered in the State of Vermont. A copy of the engineer's report based on this investigation shall be forwarded by the engineer to the: (1) local school director, (2) the Director of Administrative Services, Department of Education, Montpelier, Vermont, and (3) the Director of the Division of Environmental Protection, Agency of Environmental Conservation, Montpelier, Vermont. Such a report shall include the following information:

   (a) The location of the site or sites on U.S.G.S., county or area maps.

   (b) Proper identification of each site by name or number.

   (c) The date or dates on which the inspection was conducted.

(d) A general description of the proposed site with special emphasis on potential leach field areas. Included in the description (narrative or small plot plan) should be the ground slope, all rivers, streams, ponds, or other bodies of water and the fixed location of each soil boring and percolation test site. (Test sites should be properly flagged and identified in the field).

(e) The results of all percolation tests taken at the site. The engineer should use his judgment when choosing test hole locations and, if possible, choose locations which appear to qualify as potential leach field areas. Close proximity to swamps, streams, low areas, and wells or water supplies should be avoided.

(f) The results of soil borings taken to a depth of 8 feet in the prospective leach field areas. Identify the types of soil encountered for each foot and mention the depth to water table and bedrock if found.

(g) The engineer's opinion on the suitability of the soil to accommodate a subsurface sewage system (the engineer should assume proper installation of the system).

WATER SUPPLY

1. For any particular site, connection to an existing municipal water system approved by the Department of Health would be the preferred source of water. Contact should be made with the local public works officials, the Department of Health, and the Department of Water Resources if a municipal supply is involved, to determine whether the proposed water connection would obtain preliminary conceptual approval.

2. For those sites where a public water system does not exist or where connection to such a system would not be feasible or approved, an individual water system should be investigated to determine if a suitable source is available in the local area with respect to both quantity and quality of water.

3. If a school water system is anticipated, a preliminary investigation shall be accomplished by a qualified professional engineer registered in the State of Vermont. It is recommended that said investigation be conducted on the ONE site found to satisfy all other state requirements relative to sewage treatment (Protection Division), highway access (Highway Department), and total acreage of the tract of land (Education Department.)

The engineer's report should be forwarded to the (1) local school board, (2) Director of Administrative Services, Department of Education, Montpelier, Vermont, (3) Director of the Division of Protection, Agency of Environmental Conservation, Montpelier, and (4) Director of the Division of Environmental Health, Department of Health, Burlington, Vermont. The engineer's report should include, but not be limited to, the following information in addition to that provided for on-site sewage disposal system:

(a) Anticipated daily demand for future projected use. Estimated peak hourly demand.

(b) Potential sources of water, type (spring, drilled well), location, proximity to potential sources of pollution, source protection (minimum 200' isolation radius), depth of wells.

(c) Results of all pump tests, pumping time, capacity of source, raw water quality.

(d) Proposed development of source, treatment, storage, pump type, size, rated capacity and other pertinent data.

(e) Engineer's opinion on providing a finished water that would meet the standards of the State Department of Health.

NOTE: Current practice authorizes the state to participate on about a 30 per cent basis towards the funding of engineering services related to SEWAGE AND WATER INVESTIGATIONS. The Director of Administrative Services, Department of Education, should be contacted for details.

SCHOOL SITE INSPECTION WORK SHEET

I. Location:_____District_____

1. Name and general location of site_____

_____

2. Site

a. Is near school population center Yes_____ No_____

b. Is within walking distance of what percent of pupils to be served _____

c. Is within the following distance in miles from most distant pupils

(Circle) 2 - 4 - 6 - 8 - 10 - 12

d. Is easily accessible from improved highway Yes_____ No_____

e. Has safe means of ingress and egress Yes_____ No_____

f. Is safe distance from:

railroads Yes___No___ airports Yes___No___ airways Yes___No___

heavy traffic Yes___No___ hazardous industrial plants Yes___No___

unsightly or nonfireproof structures Yes___No___

g. Is well removed from objectionable noises, odors and other nuisances

Yes___No___

h. Is readily accessible to:

electricity Yes___No___ fire protection Yes___No___

water Yes___No___ telephone Yes___No___

existing sewage system Yes___No___

General rating as to location:

Excellent_____Good_____Fair_____Poor_____

II. Physcical Characteristics:

a. Site is on high ground in relation to surrounding terrain Yes___No___

b. Give brief physical description of site:

_____

_____

c. Site has sufficient elevation to:

Avoid flooding from streams Yes__No__

Permit good natural drainage Yes__No__

Avoid flooding from surface water Yes__No__

d. Check basic soil composition:

Loam____Sandy____Shale____Gravel____Clay____Rock____Limestone____

e. Check the term which best describes the site:

Farm under cultivation____Abandoned farm____Timberland____Grassland____

Existing building site____Old industrial site____City or borough lot____

Reclaimed land____

f. The site will require clearance of: (check)

Trees____Brush____Rubbish____Stone fences____Old buildings____

g. Site shows evidence of:

soil erosion____swampy or wet areas____recent fill____

abandoned wells, cisterns or cesspools____abandoned mines or quarries____

toxic gases, smoke or obnoxious odors____active mine, gas well, oil well____

inactive mine, gas well, oil well____high pressure gas or oil lines____

high tension power line____

h. General shape:

rectangular (Ratio width to length not more than 3.5) Yes__No__

irregular Yes__No__ approximately square Yes__No__

long axis parallel to access street or highway Yes__No__

i. Site can be developed without:

a large amount of fill Yes__No__ retaining walls Yes__No__

extensvie cut, or regrading Yes__No__ culverts or bridges Yes__No__

extensive grouting and shoring Yes__No__

j. Road systems on site can be kept within reasonable limits of economy

Yes___ No___

k. Estimated cost of site:

acquisition $_____ development $_____

preparation to receive the building $_____

III. Adequacy:

a. Total acreage in site _____acres

b. Total usable acreage _____acres

c. Will site provide adequate space for:

building and approaches____ secondary play areas: track, football, baseball____

boy's play area____ girl's play area____ elementary play areas (3)____

parking____ gardens, landscaped area, etc.____ probable additions____

Note: Separate work sheets should be completed for each site. Comparative evaluation should be made for determining best site.

SUGGESTED SCHOOL SITE RATING FORM

The following rating form can easily be completed from the information listed in the School site inspection work-sheet. The weighted values may be revised by local committees to indicate local preperences. Rating form for each site under consideration will be invaluable to those making the final selection of a school site.

SCHOOL SITE RATING FORM

INSTRUCTIONS: Score items as follows: 5 = Very Superior, 4 = Superior 3 = Average, 2 = Below Average, 1 = Poor, 0 = Very Poor. Multiply score times weight and enter result in "Total" column.

BASIC CONSIDERATIONS	SCORE	WEIGHT	TOTAL	GRAND TOTAL	NOTES
I. SIZE					
1. Size		60			
2. Expansibility		20			
II. TOPOGRAPHY					
1. Elevation		10			
2. Drainage		10			
3. Soil		10			
4. Contour		10			
5. Shape		5			
6. Natural Features		3			
7. Attractiveness		3			
III. LOCATION					
1. Central Location		5			
2. Type of neighborhood		5			
3. Zoning		5			
4. Accessibility		5			
5. Traffic Arteries		3			
6. Water Lines		3			
7. Sewers		2			
8. Electricity		2			
9. Gas Lines		1			
10. Fire Protection		2			
11. Public Transport. Fac.		2			
12. Parks and Playgrounds		2			
13. Natural Hazards		1			
14. Noise		1			
15. Glare and Dust		1			
IV. COST					
1. First Cost		10			
2. Site Development		5			
3. Building Removal		5			
4. Installation of Util.		5			
5. Street Development		5			
		GRAND TOTAL			

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SUGGESTED SPACE ALLOTMENTS FOR PHYSICAL EDUCATION - COMMUNITY RECREATION

APPENDIX I

Approximate Space Requirement				Contemplated Use of Facilities
	Elementary	Junior High	Senior High	
Pre-school or Playlot	1/4 to 1/2 acre	1/4 to 1/2 acre	1/4 to 1/2 acre	Provides 1) a section with such equipment as a small climbing structure, sand box, see-saws, slides, swings, tables and benches, drinking fountain, and 2) an open play space. A wading pool for young children and an area that may be flooded in winter for skating may be considered in addition.
Apparatus	1/4 acre	1/4 acre	1/4 acre	Provides horizontal ladders, climbing poles, rings, bars, etc., and other types of equipment suitable for body development and natural activities of youth.
Multiple-use paved	1 acre	1 acre	1 acre	A paved, all-weather surface for a variety of court games, including tennis and basketball, low organized games and activities such as dancing, roller skating.
Field Games	3 acres	6 to 8 acres	8 to 10 acres	Provides facilities and space for baseball, soccer, softball, horseshoes and other field and lawn games. Provision may be made for intramural (or modified) football, archery, ice hockey, and some forms of track and field activity for junior and senior high schools.
Quiet Activities	1/4 to 1/2 acre	1/4 to 1/2 acre	1/4 to 1/2 acre	Provides space for dramatics, music, handcraft, informal gatherings, quiet games, storytelling, and many other similar type activities. A council ring and fireplace may be included as a part of day camp experience, and picnics. A small plot for gardening could be readily provided.
Interscholastic and			10 to 12 acres	Athletic fields (possibly a stadium) with baseball diamond, football field - surrounded by running track - softball diamond, practice field, seating stands. Provision for an area to be flooded for community ice skating should be considered.
Older Adult	1/4 to 1/2 acre	1/4 to 1/2 acre	1/4 to 1/2 acre	Provides for lounging, quiet games and general sociability, with tables, benches, and shade.
TOTAL AREA	5 to 5 3/4 acres	8 to 10 3/4 acres	20 to 24 1/4 acres	

SELECTED ADDITIONAL SOURCES OF INFORMATION AND ASSISTANCE:

This appendix lists a number of publications and organizations that may be helpful as additional sources of information and assistance to committees planning new school facilities.

1. Council of Educational Facilities Planners
   29 West Woodruff Avenue, Columbus, Ohio 43210

   Educational Facilities in Urban Settings, 64 pages, 1968
   Major presentations made at the Council's 44th annual meeting,$2.50
   N.C.S.C. Guide for Planning School Plants, 156 pages, 1964, $7.50
   Schools-Planned for the Community, 168 pages, 1967, $2.50
   Presentations made at the Council's 83rd annual meeting 1966
   Facility Technology-Catalyst for Learning, 1969
   Secondary School Plant Planning Guide
   Survey of State Practices of School Construction, Final Report, 1971
   What Went Wrong?, 221 pages, 1968
   Maintenance and Operational Errors to Avoid in Educational Facility Planning

2. American Association of School Administrators (AASA)
   1201 Sixteenth St.,N.W., Washington, D.C. 20036

   Schools for America, 175 pages, 1967, $7.00

3. American School and University
   757 Third Avenue, New York, N.Y. 10017 - Published Monthly

4. American School Board Journal
   400 North Broadway, Milwaukee, Wisconsin 53201 - Published Monthly

5. Association for Supervision and Curriculum Division (ASCD)
   1201 Sixteenth St., N.W., Washington, D.C. 20036 - Publishes many publications

6. Educational Facilities Lab. Inc. (E.F.L.)
   477 Madison Avenue, New York, N. Y. 10022

7. Educational Resource Information Center (ERIC)
   Division of Information Technology and Dissemination, Bureau of Research
   U.S. Office of Education, Dept. H.E.W., Washington, D.C. 20202 - Many publications

8. Educational Technology
   P.O. Box 508, Saddle Brook, N.J. 07662 - Semi-monthly, 1972

9. Nations Schools
   1050 Merchandise Mart, Chicago, Ill. 60654 - Published monthly

10. School Management
22 West Putnam Avenue, Greenwich, Conn. 06830 - Published monthly

11. School Progress
431 University Avenue, Toronto 2, Ontario, Canada - Monthly

12. Theory in Practice
College of Education, Ohio State University
249 Arps Hall, 1945 North High St., Columbus, Ohio 43210 - Published 5 times a year

13. U. S. Office of Education, Dept. H.E.W.
Wsdhington, D.C. 20202 - Publishes many publications - can be obtained from
Superintendent of Documents, U.S. Govt. Printing Office, Washington, D.C. 20402

14. The University Council for Education Administration (UCEA)
Center for Advanced Study of Educational Administration
University of Oregon, Eugene, Oregon 97403
Publishes Education Administration abstracts 3 times a year

15. U.S.D.A. Soil Conservation Service - Detailed Soil Survey
Publications on Outdoor Education and Outdoor Laboratories

16. National Recreation Association
A. S. Barnes & Co., New York, 1947